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THIS WEEK'S NEWS

THE WINNING DESIGN in the competition for the new state hospital at Doha for the Government of Qatar in the Persian Gulf is illustrated on p. 381

IN A SURVEY into the relationship between housing design and building cost, a contributor reaches the conclusion that it is not progressive to insist, on the pretext of financial realism, that the present standards of construction and space be reduced still further while such extremes of labour and material costs as have been found exist for similar domestic structures. p. 397

"WHEN by the mid-nineteenth-century architects and town planners left speculation entirely to their clients and became professionally correct, the great period of civic design was already over," said Professor Sir William Holford, at the Town and Country Planning Summer School, on September 7. p. 402

"IF WE ARE TO RETURN to urbanity and economy in our housing layouts, we must put an end to the traffic worship of the first half of this century and relearn the art of creating a safe, happy and beautiful environment for living. We must bring our buildings closer together again, and put traffic in its proper place." This view was expressed by Mr. J. Lewis Womersley to the Town and Country Planning Summer School on September 8. p. 403

AN OUTLINE of the latest developments in the electricians' strike has been given by the general secretary of the Electrical Trades Union, at Douglas, Isle of Man. "Lists," he said, "were now being drawn up for extension of the strike in England." p. 407

THE NUMBER of permanent houses completed in Great Britain during July was 27,206, compared with 19,985 in July, 1952, according to the latest housing summary. p. 407

PRELIMINARY WORK on a £12m. project to bridge the Ganges 50 miles east of Patna is to begin this month, according to the Indian railway board. p. 411

ON STONY GROUND

ANY journey by road through the extending suburbs and the expanding towns is bound to revive misgivings about the adequacy of much post-war housing as human habitations, as opposed to mere shelter. By the same token whereby "stone walls do not a prison make," four walls do not make a home unless there is some attempt to provide at least the foundation of an ambience: with too many projects this, rather than their architectural or planning treatment, makes a mockery of the once-fashionable phrase "neighbourhood unit."

This mainly results from leaving too much to time and nature: but, either through over-optimism or sheer neglect, those two notoriously slow and muddled workers have scarcely been given a chance from the word go. The trouble is that you cannot rehouse in "non-traditional" ways a race and type of people who are at heart cottagers and countrymen, without meeting certain human needs (basic and universal where families are concerned) which were adequately met by the traditional cottage and the group in which it is traditionally found. It is, for instance, plain that the flat is not a satisfactory family dwelling unless certain provisions are made for activities which normally and traditionally extend beyond the confines of the dwellings; and these activities—children's play, household odd-jobs, drying the washing and, notably, gardening—are just as much a part of living as those which take place in the living-room. The choice of house rather than flat, and the preference for a detached house, is therefore probably more often dictated to the layman by a sound but subconscious grasp of practical reality than the sentimental "roses-round-the-door" complex to which it has been fashionable in some circles to ascribe it.

These considerations are partly practical and sociological, and partly aesthetic. The architect does not need to be told that sharp demarcation between these labels is not on examination valid: he is used to combining them. But they are not yet studied by other technicians trained and accustomed so to combine them, and in the worst cases of good buildings on squalid sites to be seen in the countryside, the architect is palpably not to blame. For some of the schemes which at present show all the signs of becoming slums, judged as *places* rather than dwellings, are not only handled competently architecturally but well-sited as far as aspect, contour, density and so on are concerned.

But this is not enough. It is at the point where planting and the choice of material and method for paths, lawns, play-spaces and in fact the whole technique of "putting a building in its context," whether urban or rural, comes in that the shortcomings become evident.

Here the architect seems either tempted or forced to delegate to others, who do not seem to speak the same language, important aspects of the work in which he probably has strong views but is not invited to express them, or else is over-ridden. They are passed into hands which, frankly, do not seem to reflect either a competence or imagination equal to the importance of making new housing into *homes*, as quite distinct from temporarily sheltering the bombed-out or homeless. This point was well made by the Sheffield city architect, Mr. J. Lewis Womersley, to the Town and Country Planning Summer School on Tuesday.

There seems need for a new technique, less grandiose than that of "landscape architecture" or even "landscape gardening," but inspired by the same principles and practised by realistic and contemporary-minded people who understand other people. Unfortunately, the average housing manager and parks committee do not always appear to have either the ambition or the ability to fill this very necessary bill, as judged by average results.

It is true that the award of medals for housing takes into

account these considerations, but alas, we cannot all live in prize-winning housing schemes, and it is by the average that posterity will judge. The question is largely one of "amenities," and the obstacle probably entirely economic. So long as necessities are lightly (or longingly) dismissed as amenities or luxuries of a cost not to be contemplated by landlords, whether private or public, the danger of creating new slums will continue. But when it is realised, for instance, that proper insulation of buildings is just as necessary as putting roofs over them, it will perhaps follow that putting shelters on bare, uncultivated ground will be agreed to fall short of creating homes or communities.

Meantime, far too much care and thought, not to mention good design and materials, seem still to be being cast on stony ground which awaits the "green fingers" of yet another missing technician whom once again the architect, *faute de mieux*, must attempt to understudy.

THE ELECTRICIANS' STRIKE

THE strike weapon may, in certain circumstances, be a legitimate method of remedying industrial grievances; indeed, the right to strike may well be regarded as one of the fundamental human freedoms. Nevertheless, the strike weapon should only be used with discretion and with a due sense of responsibility; those who seek to use it should carefully consider what object it is they seek to attain, and also the effect of their action on the temper of the community at large. The present electricians' strikes do not, in our view, satisfy these tests. Moreover, they appear to introduce a new element which we can only regard as deplorable.

The method adopted by the electricians' union is that of calling out men engaged on important works where the effect of strike action is likely to be the most hurtful. Last week, strike action was directed at Radiolympia—graphically, but not inaccurately described as "Britain's shop window to the world." Since then, the strike has spread to a number of other contracts. These include three airports in Ulster, the BEA at Nutts Corner, the RAF Station at Aldergrove, the Larport Acid Company at Castleford, and an extension to a BTH gas plant at Derby. These contracts all involve important defence and industrial projects, and there can be little doubt that the union's action is intended to cause the maximum amount of embarrassment possible. This country has trodden a long and painful road to economic recovery since the war, and there is still a long way to go before the goal of economic stability and security is attained. For any body of workers—or any other sectional interest—deliberately to attack what are deemed to be the most vital elements in our national life is a very serious matter and could only be justified on the most urgent grounds. As a building newspaper dedicated to the advancement of building as such—and of all sections of the industry, professional, contracting and operative—we are not anxious to comment on the merits of a particular industrial dispute, but we find it hard to believe that the present lot of the electrical workers is such as to justify the action now being taken.

No less invidious is the action of the Electrical Trades Union in attacking those employers who happen to represent their side of the industry on the National Joint Industrial Council. The trade unionists of this country owe a very great deal to the successful operation over many years of the joint negotiating machinery established in most industries. It is important that the joint industrial council should be truly representative of each side of industry, and that nothing should be done to discourage employers or trade unionists from taking a free and unfettered part in their work. The logical outcome of the ETU's action would be completely to destroy the mutual confidence and respect which is the whole foundation of the system of joint negotiation and conciliation. It is fair to remind the ETU that while the unions have had to fight a long battle to prevent the victimisation by employers of their officials, now that that victory has largely been won, it behoves the unions—in their own interest if for no other reason—not to victimise those very employers who are seeking to make joint consultation a workable thing.

The ETU will best regain the respect of the country at large by reconsidering their present policies.

MONTREAL HOTEL

20m. Dollar Scheme

The directors of Canadian National Railways have approved plans for a large convention hotel on the Central Station site in Montreal. The hotel, to cost about 20m. dollars, will contain more than 1,000 rooms and have convention space capable of seating 4,000 persons at a meeting and 2,500 at banquets. It is part of a terminal area development plan under discussion between the railway and the City. At the far left of the architect's drawing is shown the present International Aviation Building, owned by the CNR. Between it and the hotel is a sketch of the proposed CNR headquarters office building. The architect for the new hotel building is Mr. George F. Drummond, chief architect to CNR.

NOTES & NEWS

THE SOANE BICENTENARY

THE two-hundredth anniversary of the birth of Sir John Soane is being celebrated in London this week and no doubt many will do him honour by studying his life and work, some afresh, others perhaps for the first time. On the memorial and literary side there is a wealth of material, stored and recorded in the Soane Museum and in the published works of its curators—notably the late Arthur T. Bolton and the present holder of the office, Mr. John Summerson. The former's "Works of Sir John Soane, FRS, FSA, RA (1753–1857)," published in 1923 by the Museum, and the latter's "Sir John Soane," published by Art and Technics last year, are invaluable, the first as the authoritative life and work, and the second as a penetrating study of Soane's "sources" and his development as an architect.

If only we were as richly endowed with his buildings as we are with documentary records, how well supplied we should be. Can any architect have suffered more than Soane at the hand of the destroyer? The demolition of so many of his fine interiors at the Bank of England, about a quarter of a century ago, as a prelude to rebuilding and enlargement, though possibly unavoidable, deprived us of some of his finest and most characteristic work, including the Bank Stock Office, the Consols Office, the Waiting-Room Loggia and the Rotunda. Did Soane have a presentiment of his fate at the Bank? It would seem so, for he got J. M. Gandy to make a water-colour drawing for the RA Exhibition of 1832 showing the Rotunda and the Four Per Cent. Office in ruins!

HIS BUILDINGS DESTROYED

SOANE was unlucky even in his own lifetime, for his Scala Regia, Royal Gallery, and other work at the House of Lords were destroyed in the fire of 1834. Within seventy years of his death nearly all his major London buildings had disappeared, while the recent war accounted for his Chelsea Hospital Infirmary and the Dulwich College Picture Gallery, the latter now rebuilt, however, in accordance with the original design. [See *The Builder*, August 7, 1953.]

Fortunately his screen wall and some of his interiors were preserved at the Bank, though the latter are not normally accessible to the public. In addition we have in London the Soane Museum itself (his own house) in Lincoln's Inn Fields, where his stylistic peculiarities can perhaps best be studied, and the country house which he built for himself at Ealing, Pitzhanger Manor, now the Ealing Public Library. Then we have the three churches of Holy Trinity, Marylebone, St. Peter's, Walworth, and St. John's, Bethnal Green, though these are not entirely characteristic works, and the interior of the last-named has been completely remodelled. And we should not, of course, overlook (should indeed make a pious pilgrimage to) the entirely characteristic tomb in the burial ground adjoining old St. Pancras Church, which the architect built after Mrs. Soane's death in 1815, and where he himself lies.

Outside London a number of his works still survive. There is Tyringham, Bucks, now somewhat altered, with its gateway and lodges; and many "historic house" enthusiasts will be familiar with the library and staircase at Albury Park, near Guildford, and the "blue and white" library at Aynho Park, near Banbury. Arthur T. Bolton, in the book earlier cited, gave a complete list of Soane's works, but this is now out of date. Unless he has already done so, the Curator would put many students of Soane in his debt if he could compile and make available the full tally of existing works of this remarkable architect, whose stature seems to grow rather than diminish with the passing years.

THE ABBEY'S FINANCES

THE FIGURE of nearly £800,000 as the cost of preparing Westminster Abbey for the Coronation, which appeared in a statement (quoted in our last issue) urging Government action to restore the Abbey, which was issued recently by Mr. G. H. Lowthian, general secretary of the AUBTW, seemed unduly high even for these days of high costs. Inquiries at the Ministry of Works have elicited the fact that the correct figure for the cost of preparing the Abbey was under £300,000, to which must be added £50,000 as the cost of the annexe.

Since the statement by Dr. Adam Fox that the Abbey was in grave danger unless repairs could be carried out immediately, thousands of letters have reached the Dean and Chapter enclosing gifts towards the £1m. restoration fund. In addition, Field-Marshal Lord Montgomery has conveyed to the registrar, Mr. T. Hebron, the promise of an anonymous Canadian gift of $100,000.

Many letters have also been received protesting against the AUBTW's suggestion that the State should take over the responsibility of restoring the Abbey.

CONTEMPORARY EMBROIDERY

IT is not always the larger galleries, or he more "arrived" artists, who give the most pleasure. Two current exhibitions in London well repay visits, and are small and accessible enough for even the busiest of us. Both, writes Basil Marriott, have a certain freshness and air of promise that is welcome in these rather jaded days.

Contemporary Embroidery, at The Artists' House, Manette-street, W1 (until September 15) is particularly rewarding and ought to interest all architects and interior designers. A group of embroidresses under Miss Iris Hills, ARCA, and mainly representing work of the Bromley College of Art, have had the courage and good sense to bring their work to market, and to a wider public than the rather "parents' day" limitations of the usual art-school exhibition.

There are many charming and modestly-priced things to be seen there—and how very different from the Crinoline Ladies and Lazy Daisies some of us still associate with the word embroidery! About a third of the exhibits are executed by the ordinary domestic sewing-machine, using a special gadget in commercial supply. They offer a salutary lesson to those purists who resent machine methods in what is eminently a traditional handicraft. The result gains rather than loses by the method, and bears at least as legitimate relation to hand-work as, say, good typography to calligraphy.

Personal likes were Joyce Conwy-Evans' "People with Fish," a totem-poleish fancy, and her "Shells" in pinks, rust and grey, rather suggestive of Graham Sutherland; Jennifer Gray's splendid "Lion" (19) in the round, in bold yellow with gold thread and sequins, and her enchanting and delicate "Still Life" in white and cream spangled with opalescent beads; Pamela Rooke's "Flower Panel" (27) a delicate line doodle, and her "Sea Life" (28), not forgetting a most arresting "Horseman" (30) by Connie Target, in sober grey and browns with sequins, rather Aztec in flavour. Of bolder decorative quality, Alison Liley's "Circus" is a splendid example of machine technique. These embroidery pictures have a textural and tactile interest making them particularly suitable decorations for the small room.

PAINTINGS

Two interesting women artists exhibit at the Irving Galleries, Irving-street, Leicester-square, until September 30—Jennifer Rope, who is understood to have only recently finished her studying, and Margaret Wilson. Miss Rope clearly has a lively mind as well as a perceptive eye, and appears to take herself less seriously than her painting—a refreshing and unusual thing these days. Best-liked was her "Jo Untangling Wool" (11) but "On Saturday Morning" (3) and the witty "After the Market" (4) give much pleasure. The rich but subtle colour of "In Vacant or in Pensive Mood" (14—and apt quotation) shows remarkable feeling in the marshalling and composition of its colour.

Margaret Wilson is at once more mature but perhaps less assured—a not unusual phase of development, which may prove to be a good thing. There is more atmosphere in some of her work—a charming seascape of Cornwall (32) for instance, in soft, rainy grey-greens which are very true of the Duchy and preferred

COMING EVENTS

FRIDAY, SEPTEMBER 11

ROYAL PHOTOGRAPHIC SOCIETY.—Centenary Pictorial Exhibition. 16, Princes Gate, SW7. Continuing until October 17. Mondays to Fridays, 9.30 a.m. to 5.30 p.m.; Saturdays, 9.30 a.m. to 7 p.m.

TUESDAY, SEPTEMBER 15

RIBA.—Travelling exhibition, "Home and Surroundings." Harris Museum and Art Gallery, Market-place, Preston, Lancs. Continuing until October 1.

WEDNESDAY, SEPTEMBER 16

INSTITUTE OF QUANTITY SURVEYORS.—Inaugural meeting of the East Anglian branch at the Assembly House, Theatre-street, Norwich. 7.30 p.m.

LONDON BUILDING AND ENGINEERING CONTRACTORS' ACCIDENT PREVENTION GROUP.—Group meeting. Safety, Health and Welfare Museum, Horseferry-road, SW1. 2.30 p.m.

THURSDAY, SEPTEMBER 17

RIBA GOLFING SOCIETY.—Autumn meeting (The Selby Cup). Denham Golf Club.

FRIDAY, SEPTEMBER 18

FACULTY OF ARCHITECTS AND SURVEYORS AND FACULTY OF SURVEYORS OF ENGLAND (DEVON AND CORNWALL BRANCH).—Inaugural meeting of proposed Devon and Cornwall branch of the joint Faculties. Grand Hotel, The Hoe, Plymouth. 6.30 p.m.

to the rather harsh and formless green of other outdoor subjects. She seems happier with solid rectangular compositions, including buildings, than with looser-knit landscape subjects. Her self-portrait (34) is well realised in rather sombre tones.

Both these painters should "arrive," though possibly by slightly divergent routes.

G. D. HARBRON MEMORIAL

THE York and East Yorkshire Architectural Society are to perpetuate the memory of George Dudley Harbron, FRIBA, a past-president of the society, whose death occurred on April 1 last, by the annual award in competition of a bronze portrait medallion. The competition will be open to all students of architecture within the society's area. This proposal will require a sum of about £300.

Contributions to the fund should be sent to the president of the York and East Yorkshire Architectural Society, Mr. Allanson Hick, FRIBA, 4, Bond-street, Hull.

HOUSING CONFERENCE

ABOUT 1,000 delegates, including officers and chairmen of housing committees from local authorities in all parts of Britain, are expected to attend the 22nd annual conference of the Institute of Housing, to be held this year at the Royal Hall, Harrogate, from September 17 to 19.

At the opening session, the Institute will submit for discussion a memorandum on "Rent Rebates," and this will be followed in the afternoon by a paper on "Land Shortage and its effect on Housing," by Mr. A. Hutchings, MBE, MIMunE, engineer and surveyor to Cuckfield RDC. On September 18, Mr. J. P. Macey, FRICS, FIHsg, deputy housing manager, Birmingham, will speak on "Old Houses—Repair or Replacement?"; and Mr. R. J. Cowley, FIHsg, AIMTA, ASAA, housing manager, Wolverhampton, will address the conference on "Making the Fullest Use of Existing Houses." On September 19, some 350 delegates will participate in conducted tours of housing estates of the Leeds and Harrogate Corporations and the Nidderdale RDC.

PROFESSIONAL ANNOUNCEMENT

MR. HAROLD W. PARSONS, FIAS, corporate quantity surveyor, has commenced practice on his own account at 44, Pen-y-lan-road, Roath Park, Cardiff (tel.: Cardiff 44533).

FROM "THE BUILDER" OF 1853

Saturday, September 10, 1853

BATTERSEA-PARK AND IMPROVEMENTS.—The Commissioners of Woods and Works having settled with all claiming compensation, the area of the proposed park has been cleared, with the exception of the British Flag beer-shop and a few small tenements, which will be forthwith pulled down. The sum allowed to the proprietor of the Red House was 11,000*l*. The whole area is to be ploughed up and manured. The construction of the suspension-bridge, which had been stopped for some months, has been resumed. On the Surrey side of the new bridge a vast number of detached villa residences have already been commenced.

"My dear comrade English architect—you will never persuade me that the dominant influence at Canterbury is French!"

CORRESPONDENCE

FIRE ESCAPES IN FLATS

To the Editor of *The Builder*

SIR,—I have been looking at some published plans of tall multi-storey blocks of flats in London, and notice that the main staircases, which are also fire exits, are glass walled. This staircase wall glazing is completely opposed to what was the usual practice in New York City where a 12 in. thick solidly walled staircase-well termed a "fire tower," and artificially lit, is the order of the day for escape staircases in tall elevator-access apartment houses. This type of fire exit could be used with advantage in this country now that we have adopted in a mild form (unfortunately, as I think) their skyscraper type of structure for public housing purposes. The risks of fire for the high-up occupants of our tall flats would be far less if the fire tower were to be adopted along with fire hydrants in all public corridors on all floors as in New York.

The excessive use of glazing for large windows to main living-rooms seems unwise in the event of fire, especially if the glazing were to extend from floor to ceiling on successive floors of multi-storey structures (and unless a fire-resisting material were to be used to window cill height inside the glass). All fire-prevention devices—sprinklers, fire hydrants, fire escapes, and lifts—are costly, but they are very necessary for all tall buildings which, it seems, we are now so determined to erect.

A. NEVILLE HOLT [FRIBA]
20, Exchange-street East, Liverpool.

WHEN IS A TOWER NOT A TOWER?

To the Editor of *The Builder*

SIR,—Of all the perverse misuses of a word in current jargon the application of the term "tower" to any higher portion of a modern building, whatever its dimensions and proportion of the whole, seems to me, whether intentionally or not, one of the most misleading.

The Concise Oxford Dictionary, to which many laymen have recourse in case of need, defines a tower as a "tall, usually equilateral (especially square) or circular structure, often forming part of a church or other large building," and it is of such a feature as this that the term will evoke a mental picture in the minds of the vast majority of English speaking people.

How then can this same word be properly applied to, for example, the so-called "tower" which is illustrated in perspective on page 308 of your issue of August 28, and which, so far from being equilateral, square or circular, would appear to consist of a rectangle, 21 bays in width to three in depth, occupying an area of 30,000 sq. ft. out of a site developed to 66,000 sq. ft. at ground level. I have a shrewd suspicion that this use of the term is rapidly becoming a euphemism for any high structure in the modern taste, which would be less acceptable to the lay public if more accurately described.

We architects often complain that the elementary principles of architecture are not more generally appreciated or understood. It behoves us therefore to be very careful not to complicate the issue by misapplying words in common usage and to reserve such a description as "tower" to the sense in which it is most commonly interpreted.

PAUL PAGET [LRIBA].
41, Cloth Fair, EC1.

*** The building in question is the Chicago Coach Terminal Building.—ED.

RIBA

Maintenance Scholarships for 1953-54

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS announce that the following Maintenance Scholarships have been awarded for the year 1953-54:

An RIBA Fourth- and Fifth-Year Maintenance Scholarship of £60 per annum to Mr. K. W. Barnes, of Wallington, Surrey.

An RIBA Howe Green Fourth- and Fifth-Year Maintenance Scholarship of £40 per annum, to Mr. J. W. Francis, of Slough, Bucks.

An RIBA Houston Maintenance Scholarship of £125 per annum to Mr. J. D. Connell, of London, SW10.

The Builder Maintenance Scholarship of £75 per annum, to Mr. P. G. Wentworth-Shields, of London, SW1.

The Maintenance Scholarships previously awarded to the following candidates have been renewed:

Mr. D. S. Bremner (Aberdeen School of Architecture, Robert Gordon's Technical College — RIBA Houston Maintenance Scholarship of £125 per annum).

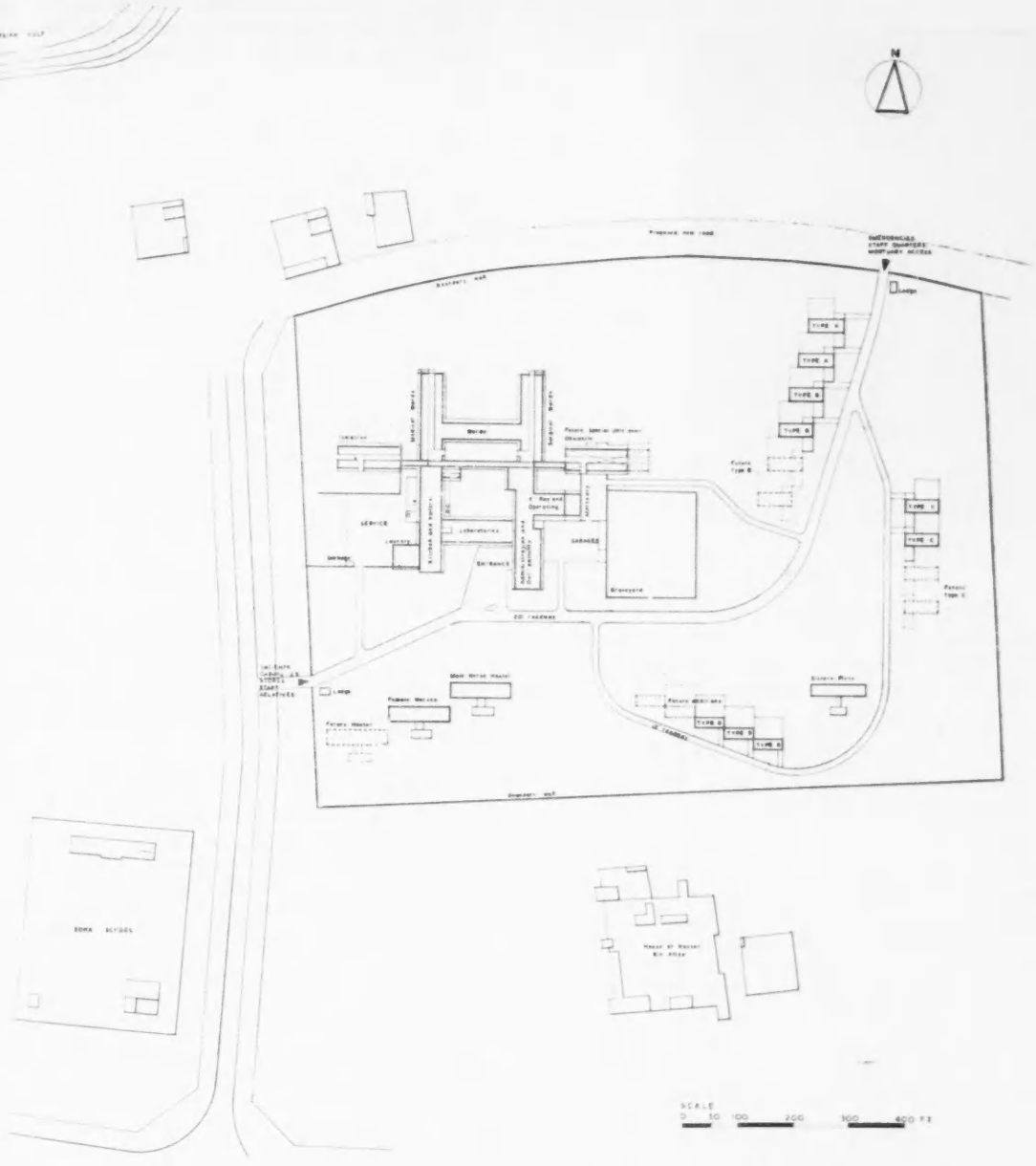
Mr. B. E. Clack (School of Architecture, The Polytechnic, Regent-street, London—RIBA Houston Maintenance Scholarship of £125 per annum).

Mr. A. G. H. Morrow (Department of Architecture, The Northern Polytechnic—RIBA Houston Maintenance Scholarship of £125 per annum).

Mr. D. G. Potter (School of Architecture, The Polytechnic, Regent-street, London—RIBA Houston Maintenance Scholarship of £125 per annum).

Mr. W. B. Sidnell (Bartlett School of Architecture, University of London—RIBA Houston Maintenance Scholarship of £125 per annum).

Mr. A. G. Diprose (Architectural Association, School of Architecture—Ralph Knott Memorial Maintenance Scholarship of £45 per annum).



COMPETITION FOR NEW STATE HOSPITAL, DOHA, PERSIAN GULF

Assessor
ALEXANDER S. GRAY, FRIBA

Winner
JOHN R. HARRIS, AADipl, ARIBA

THE award of the assessor (Mr. Alexander S. Gray, FRIBA, of W. H. Watkins, Gray and Partners) in the architectural competition for a new State Hospital at Doha, Persian Gulf, for the Government of Qatar, has now been made.

First (£1,250 premium): John R. Harris, AADipl, ARIBA, 38, Queen Anne-street, London, W1.

Second (£1,000): Alister G. MacDonald, FRIBA, and Eric D. Maidment, DipArch, ARIBA, 10-13, Bedford-street, WC2.

Third (£750): Dr. C. L. P. Franck, Dr. Jur (Wursburg), FRIBA, 30, Cedar Lawn-avenue, Barnet, Herts.

The winning design is now illustrated.

THE ASSESSOR'S REPORT

The assessor's Report is as follows :

I have carefully examined each of the seventy-four designs submitted by competitors. The standard is high, and the designs indicate a considerable knowledge of hospital planning and a close study of the particular problems presented by the competition.

Many of the designs would make very fine buildings appropriate to the locality; most of them are extremely well drawn, and the reports well presented.

In most of the entries the ward units are well arranged and sited but with few exceptions the arrangement of the ancillary departments of the hospital is confused, leading to difficulties in the working of the hospital.

MR. JOHN R. HARRIS, AADipl, ARIBA, whose design has been placed first in the competition.

Photo : Maurice Rickards

I have no hesitation in awarding the first place to design No. 58 [Mr. John R. Harris, AADipl, ARIBA] ; of all the designs submitted this offers the best solution to the problem.

The ward units are particularly well planned to afford good supervision and economy in working while they are sufficiently compact for air-conditioning without detriment to good cross ventilation. The planning of the single bed wards to avoid sun and glare is ingenious.

The placing of the operating theatres and X-ray department in relation both to the wards and the out-patients' department is good, but the planning of the kitchen department needs some improvement to avoid through traffic. The boiler house should be placed near ground level.

The buildings are well arranged on the site, and the entrances conveniently placed. The hostels and houses are well planned and related.

The design gives the accommodation asked for and the cubic extent of the buildings (amounting to a total of 1,474,950 cu. ft.) indicates an economical first cost.

The construction and specification proposed allow economical use both of local and imported materials ; the character of the buildings as indicated would be most appropriate to the architecture of Doha.

Design No. 50 [Messrs. Alister G. MacDonald, FRIBA, and Eric Maidment, ARIBA], which I recommend for the second premium, is developed upon more open lines and is, I consider, the best of several designs of this type in which the buildings as a whole are particularly pleasing and suitable. Each department shows much study and invention, but there is not the same clarity in the arrangement between them. The required accommodation is provided and the cubic extent indicates a building at reasonable cost.

The third premium I have awarded to design No. 40 [Dr. C. L. P. Franck, FRIBA] ; all wards are given a northern aspect and the elevations are simple and attractive.

The 74 designs submitted are now on exhibition to the public at the Building Centre, 26, Store-street, WC1, until to-morrow (Saturday, September 12).

THE WINNER'S REPORT

The Site.—The hospital is placed in the western half of the site in order that ward blocks planned on the northern side of the hospital may command views towards the sea, the hospital itself being on the town side of the site away from the aerodrome. The living accommodation for families has been kept to the eastern side of the site, each house having a view towards the sea. The accommodation is separated sufficiently from the hospital to have an atmosphere of its own. Games could be played in this area without undue risk of disturbance to patients.

Site Circulation.—The site has an entrance at either corner kept clear of ward blocks. The main entrance (west) is intended primarily for access to the hospital, whilst the northern entrance is intended primarily for access to the houses.

The Plan.—The general principles affecting the plan of the buildings are :—

(1) It has been decided after much study to plan the hospital two storeys in height.

(2) Male and female separation is horizontal : female on the ground floor, male on the first floor.

(3) The separation of the isolation block. It is felt this separation is desirable (although not now normal in this country), when taking into account diseases in the locality.

(4) All wards face north to the prevailing wind, away from the two entrances. The verandahs of the single-bed wards face east or west. These single bed wards are pleasantly lit by reflected light from the verandah walls. In general the blocks have spine passages ; where desirable louvres will be provided into the spine passage to give through ventilation. These louvres will also be brought into use for recirculation of conditioned air for which the spine passages will be used. The two- and four-bed wards have been so designed that opposite walls may be opened in winter or in emergencies to give through ventilation.

(5) The buildings are planned on a 10 ft. bay with non-load-bearing partitions, allowing alterations to room sizes to be quickly made if required in the future.

(6) The kitchen department, together with the boiler house and flue, is planned on the south-west, leeward side of the hospital.

(7) It is intended that the medical block roof be used by male patients, surgical block by female patients. The isolation block has the roof divided into two sections, one for male and one for female ; the obstetric block roof for those patients in that block ; while provision is made for the staff on the pathological department roof. It is intended that the stairs to the roof in the two centre ward blocks respectively should be used in the case of the medical block by male patients only, and the surgical block by female patients only. In addition, these stairs are of course intended for fire escape in emergency.

The Elevations.—The elevations have been designed to be in harmony with existing buildings. All walls subject to the sun's rays are surrounded with 5 ft. cast *in situ* concrete canopies, over which rainwater is allowed to discharge. External wall surfaces to be light in colour. Those surfaces reflecting into the building would have washes of pale colours, buff, pink, and blue, also green, a colour of great significance in the Persian Gulf area through its lack in nature.

Construction.—The construction generally will be of reinforced concrete and, as described above, the hospital and houses have been designed on a 10 ft. bay with non-load-bearing partitions, allowing partitions

to be moved at will. A simple standard precast column 1 ft. 4 in. by 8 in. is used throughout, except for the unloading bay. The columns continue above the roof on external walls to take " faroush " panels forming traditional ventilated parapets, and on spine walls to carry loggia roofs. The external fins 2 ft. 6 in. by 4 in. are also standard, and, it is intended, should be precast with *in situ* concrete canopies spanning from fin to fin. The columns and fins could be made quickly in the shade, and under careful supervision in a compound on the site. Columns would be connected by *in situ* beams running the length of the blocks, floor slabs being cast across these beams projecting over the external walls to form canopies. All ceilings on either side of the corridors would have flat soffits without projecting beams.

Expansion joints to be formed at 40 ft. centres (or every fourth bay). Panels to be constructed in two thicknesses of " faroush " (the cavity being filled with insulation for external walls and partition walls where heat or sound insulation is required). Openings in panels to be traditional teak or other hardwood joinery (louvres, grilles, doors, etc.). Gable ends facing south on the hospital and all gable ends to houses and hostels to be in random rubble. In general, metal windows to be side-hung alternately so that they may form scoops for the breeze. In addition, windows to be fitted with locks with master key for locking during the air-conditioning period.

The structural sub-roofs to be of simple reinforced concrete slab construction painted with bitumen. Wood wool slabs to be used as permanent shuttering. Roofs used by ambulant patients and staff to have a further 7 in. of traditional mud finished with concrete tiles. The centres of these roofs are to have loggias roofed by light prefabricated aluminium trusses of a low pitch, roofed in white corrugated plastic sheeting. Roofs not used by patients or staff to have a low pitch behind parapets. Rainwater discharging through parapet weep holes at 5 ft. centres and over canopies. These low-pitch roofs to be laid on light steel framing carried on the structural concrete, the steel roof being free to move and take up expansion and contraction. The roofing materials to be corrugated sheeting with whitened outer surface for solar radiation, separated from the concrete with a ventilated air space. In general the construction is designed to be as fire-resisting as possible.

Finishes. Floor finishes to the theatre block and all sanitary apartments (also entrance hall, out-patients and mortuary) to be in terrazzo or terrazzo tiles. Ward blocks except as above to be in teak block flooring. The kitchen to have quarry tile floor.

Wall finishes to be in hard plaster paint in light colours, except in sanitary apartments, theatre block, mortuary and out-patients where the walls will have terrazzo or terrazzo tile dados. Ceilings hard plaster except for ward passages, these to be constructed with acoustic panels below the service ducts.

Services. Generally: The spine service duct for the hospital is in the sub-ceiling of the ward passage, and from this duct all wards and operating theatres are fed. All drainage to be external.

(1) Air-conditioning.—It is proposed to instal a central compressor plant for cooling water, below the kitchen block, this chilled water to be circulated by pumps round the hospital via the ward passage duct. Each block will therefore be provided with its own air-conditioning plant consisting of fresh air and main filters, cooling battery, fan and automatic controls. From these local fans, systems of ductwork would be run to the various rooms of the block via the sub-ceilings over the spine corridors. Recirculation would be via the block corridors themselves back to the zone plant rooms. This scheme, it is considered, would show a considerable saving over a central ducted system where the primary ducts in the case of the hospital would be very large and could not be accommodated in the sub-ceilings. Further, the system proposed allows for flexibility of control, particularly required in the case of the operating theatre. In winter the theatre would be heated by the zone air-conditioning plant using the chilled water pipes to bring warm air to the plant in place of the normal chilled water.

As an alternative to, or possibly in combination with, the proposed zone air-conditioning plants, unit air coolers could be used, supplied similarly with chilled water.

(2) Water Services.—The hot water service would be by means of pump circulation from calorifiers provided with steam from the central boiler plant. Sweet and crude water would be provided throughout the building by means of a pipe system from overhead supply tanks. (Tanks steel sectional.)

Boiler Plant.—In view of the fluctuating load on this plant, it is suggested that the boilers could be of shell type. Boilers would be oil-fired.

(3) Fire Fighting Services.—It is proposed to provide a crude water ring main outside the buildings underground, with hydrant points.

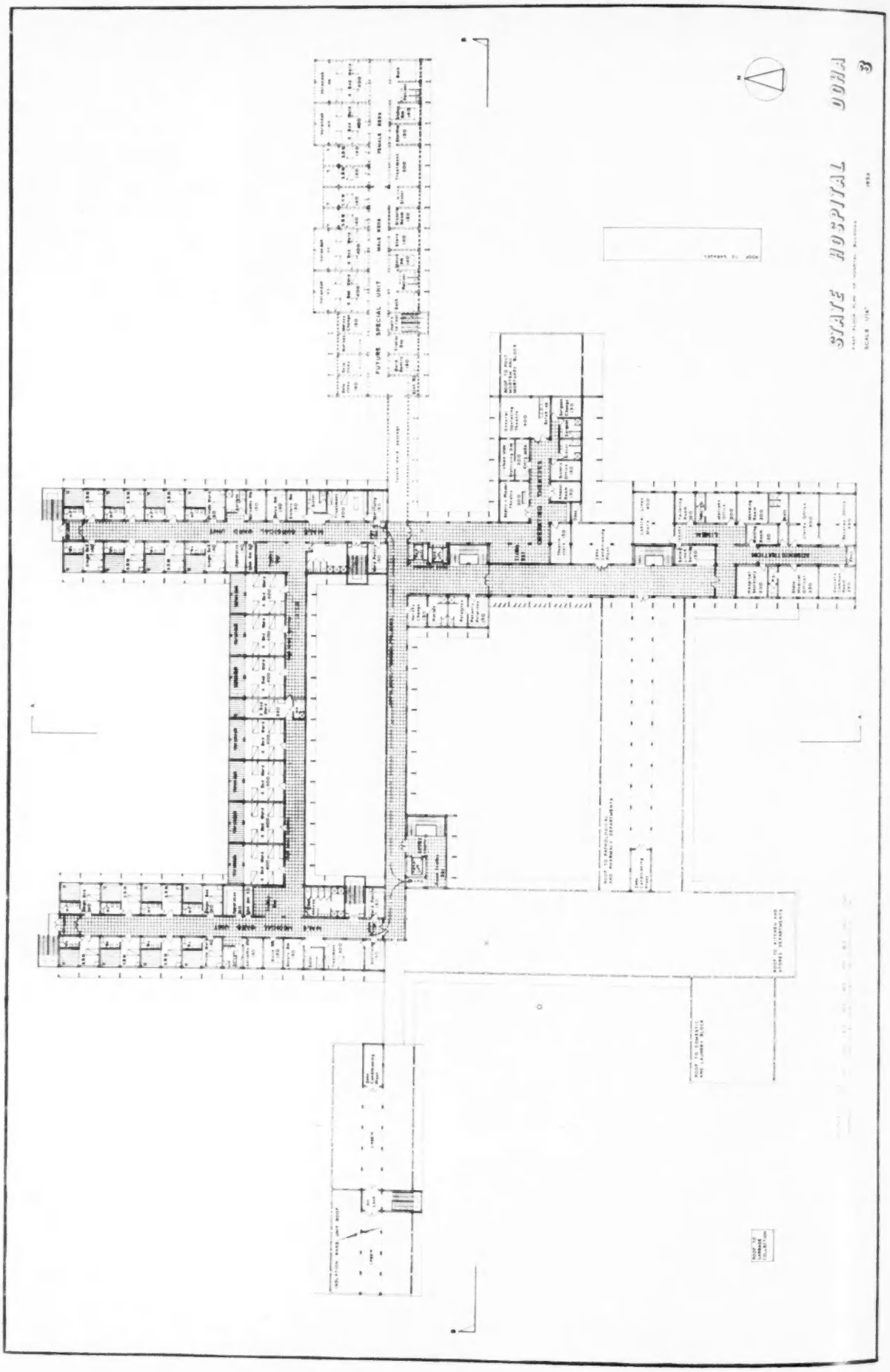
(4) Electrical Services.—Electrical intake is situated at the southern end of the basement, to minimise cabling. A primary lighting system throughout the hospital will be provided. The secondary lighting system would be operated at mains voltage from a central battery system.

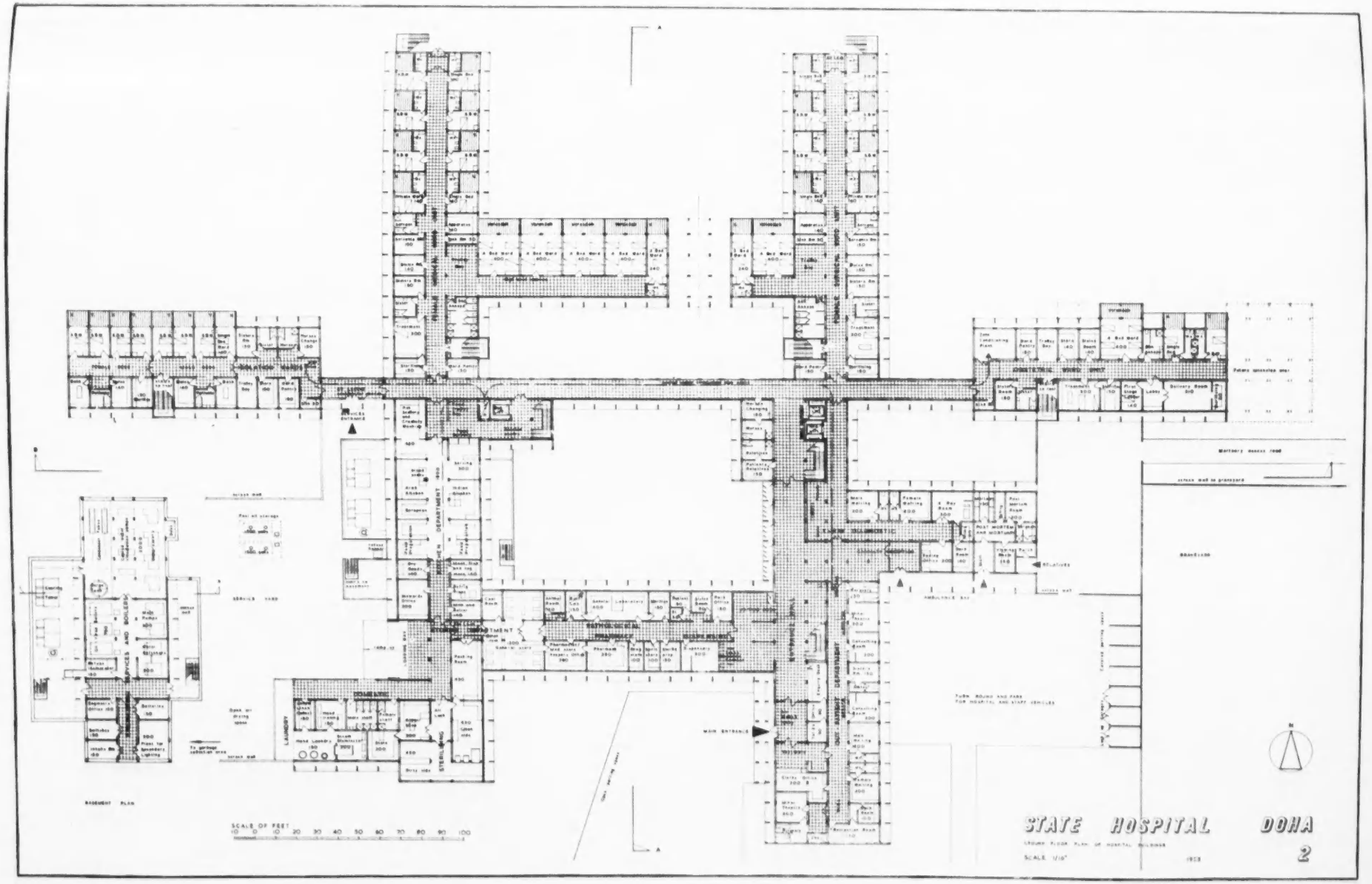
CUBE OF HOSPITAL DEPARTMENTS

		cu. ft.
1.	Administration department (including entrance hall)	83,500
2.	Linen department	16,250
3.	Stores department, including pharmacy	40,000
4.	Dispensing department	7,300
5.	Kitchen	56,500
6.	Engineering services and boilers (ground floor and basement)	65,000
7.	Laundry	12,500
8.	Domestic accommodation	6,250
9.	Pathological department	25,500
10.	Mortuary and post-mortem department	18,000
11.	X-ray diagnostic department	36,400
12.	Operating theatres	47,100
13.	Central sterilising department	15,250
14.	Out-patients' department (medical, surgical and refractory)	70,000
	In-Patients' department — cu. ft.	
15.	Female medical ward unit — 128,000	
16.	Male medical ward unit — 128,000	
17.	Female surgical ward unit — 98,500	
18.	Male surgical ward unit — 112,300	
19 and 20.	Ancillary units to above (ground and first floor) — 31,000	
21.	Obstetric ward unit — 78,000	
22.	Isolation ward unit — 81,500	657,300
23.	Circulation passages, stairs, lifts, extra to above	75,000
	Total	1,231,850
	Future special unit	75,000

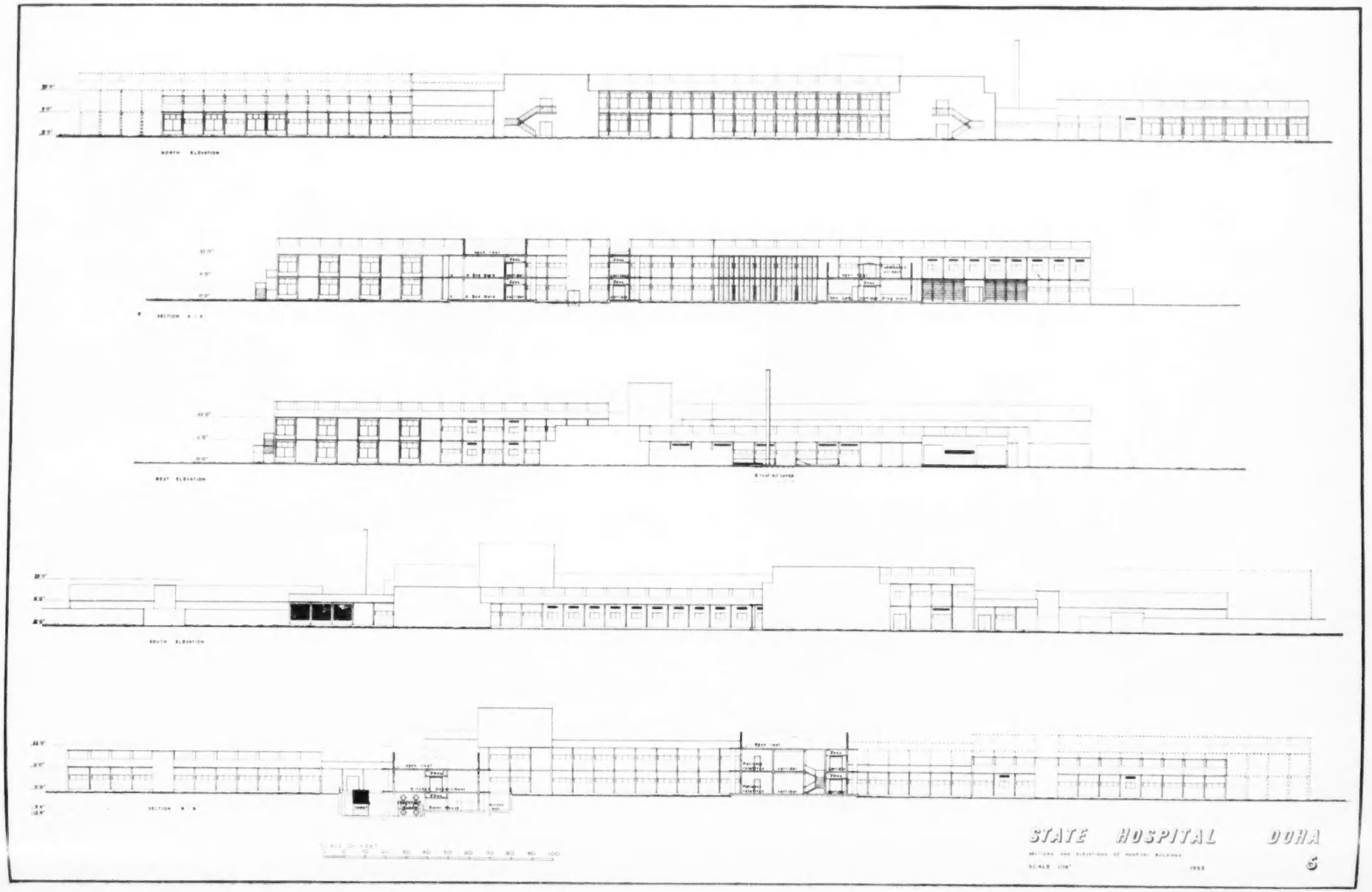
CUBE OF RESIDENTIAL ACCOMMODATION

		cu. ft.
1	Type A house	47,800
1	Type B house	46,500
1	Type C house	28,700
1	Type D house	15,100
1	Nurses' hostel for eight nurses	48,300
4	Sisters' flats	56,700

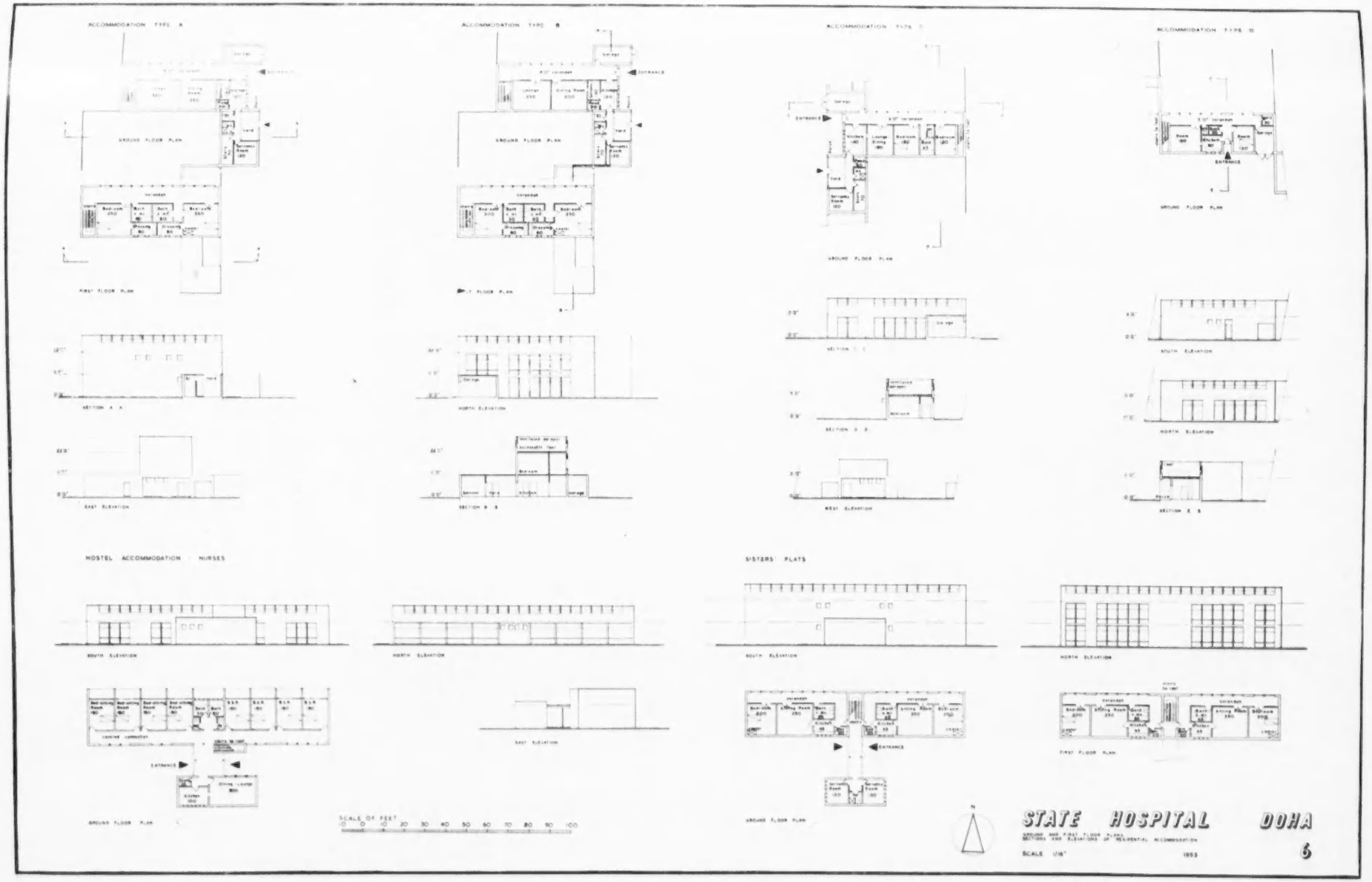

STATE HOSPITAL
3



COMPETITION FOR NEW STATE HOSPITAL, DOHA, PERSIAN GULF : WINNING DESIGN. JOHN R. HARRIS. AADipl, ARIBA, ARCHITECT


NORTH ELEVATION
WEST ELEVATION
SOUTH ELEVATION
STATE HOSPITAL DOHA
1953

ACCOMMODATION TYPE A
ACCOMMODATION TYPE B
ACCOMMODATION TYPE C
ACCOMMODATION TYPE D



COMPETITION FOR NEW STATE HOSPITAL, DOHA, PERSIAN GULF : WINNING DESIGN. *JOHN R. HARRIS, AADipl, ARIBA, ARCHITECT*

General view from the north-west.

"MONTROSE HOUSE," GEORGE STREET, GLASGOW

For the Ministry of Works

Designed in the Directorate of Works and Services Division, MOW, Scotland, by
STEWART SIM, DA(Edin), FRIAS, FSA (Scot)

Engineering Consultant
W. RUSSELL, AMIHVE

Builders
W. & J. R. WATSON

THESE offices, built at the corner where George-street and Montrose-street join, were planned prior to the war, but held up because of hostilities. They are to provide accommodation for departments previously housed in requisitioned or inadequate premises. The building is " L " shaped in plan with a central lift hall and staircase. There are subsidiary stairs at the extremities. The actual office accommodation is approximately 69,000 sq. ft. and it will house a staff of about 700. The cost of the building is approximately £350,000. The building is seven storeys high with, in addition, basements following the varying level of the site and to some extent governed by the basements that existed in the buildings that were demolished to make way for this project. Inland Revenue staff will occupy the first four floors. Above that the floors have been allocated to the Ministries of Works and Supply. While the bulk of the accommodation is offices, the building also contains telephone switch room, transformer house, canteen and conference room.

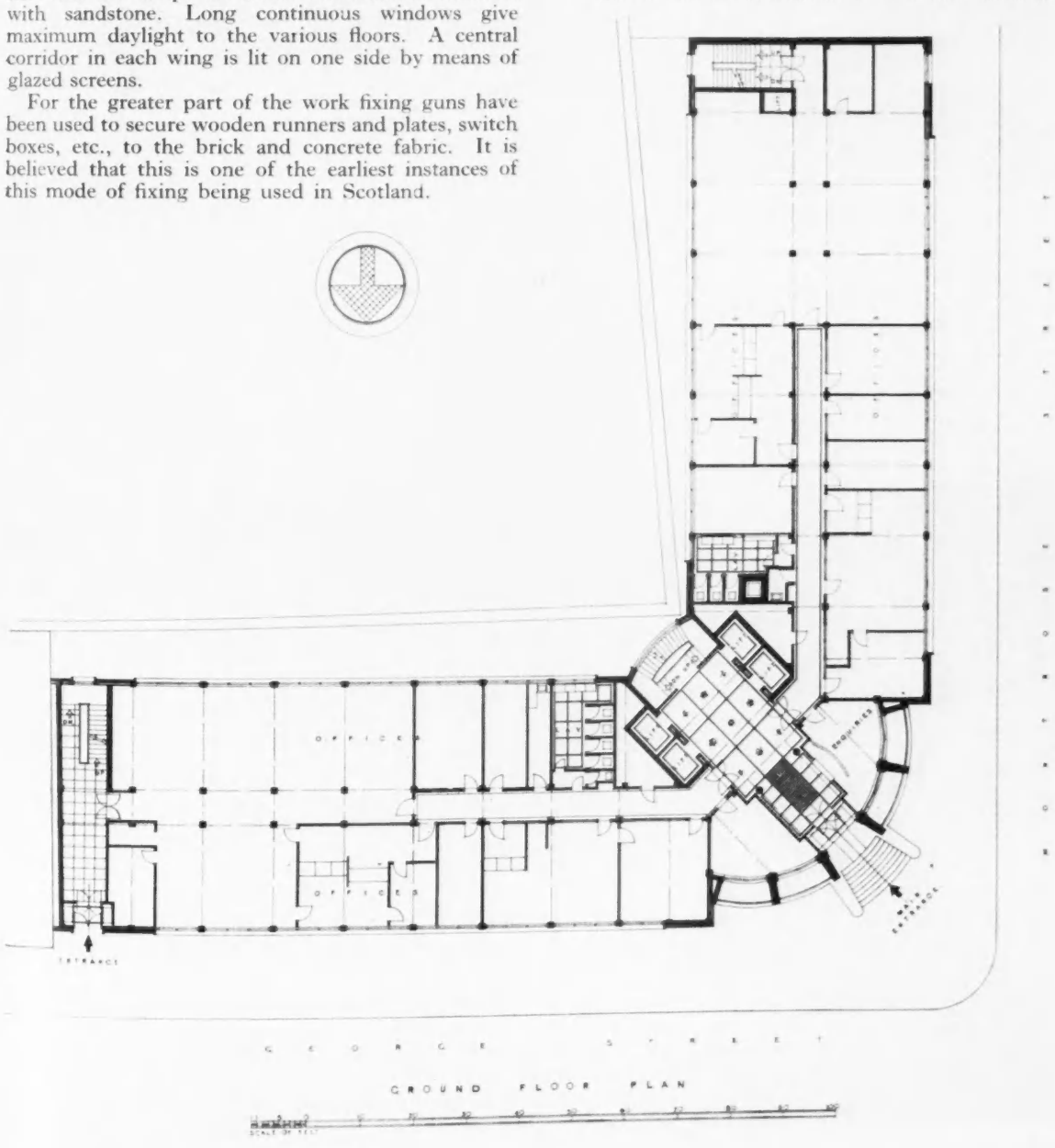
The building has a steel frame some of which is in high-tensile steel. The floors are of hollow tile and concrete, finished in the offices with linoleum and in the corridors and main halls with rubber. Externally the walls are of special hollow construction veneered with sandstone. Long continuous windows give maximum daylight to the various floors. A central corridor in each wing is lit on one side by means of glazed screens.

For the greater part of the work fixing guns have been used to secure wooden runners and plates, switch boxes, etc., to the brick and concrete fabric. It is believed that this is one of the earliest instances of this mode of fixing being used in Scotland.

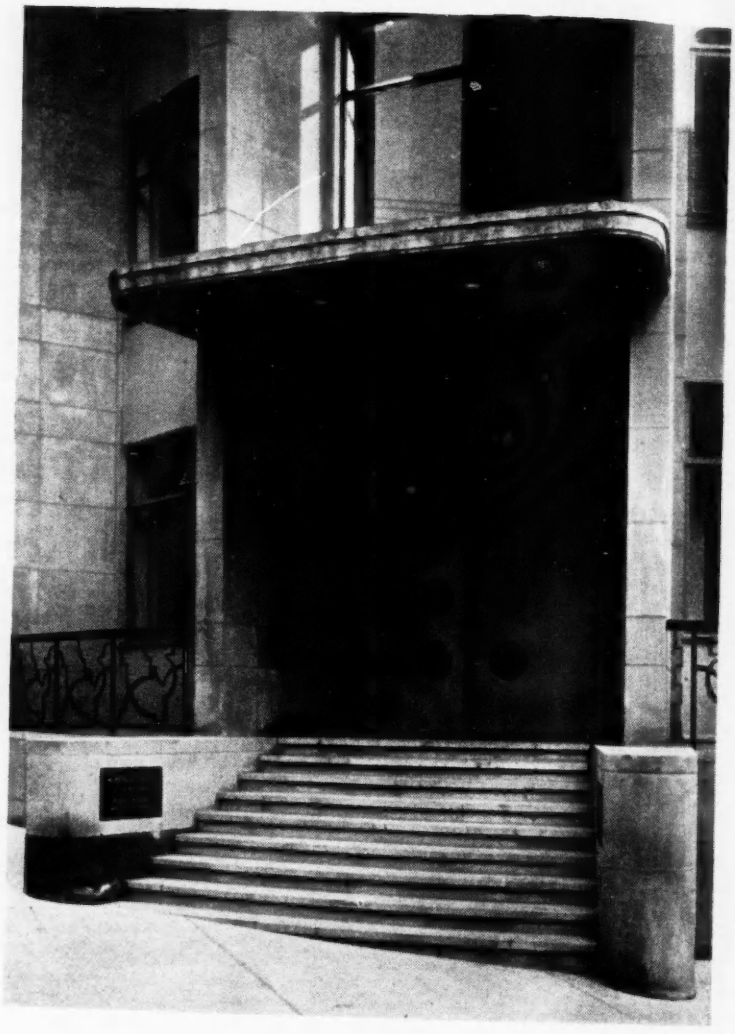
Heating, except in the basement where there is a small number of radiators, is by means of half-inch diameter copper coils embodied in the ceilings, the system being controlled by automatic temperature regulators placed externally at salient points of the building and each recording the external temperature at that particular place. The boilers are oil fired to minimise smoke nuisance, the fuel being creosote pitch. In winter hot water is provided through heat batteries in calorifiers connected with these boilers, and in summer from gas boilers. A partial plenum system has also been installed. It takes in air at the rear of the basement and supplies the various rooms with warm air at room temperature. Lighting is by means of fluorescent fittings.

A certain amount of symbolism has been used in the building, the main aluminium entrance doors having rondels with reliefs showing the centres of government in England and Scotland and with free adaptations of the coins of the realm. Internally the rubber floors in the various halls have devices indicative of the different floor levels and the nature of the occupying departments. The collecting activities of the Inland Revenue and the activities of the Ministry of Works and Ministry of Supply are suggested in the decoration.

In the various lift halls the walls have been veneered



GROUND FLOOR PLAN



Detail of main entrance.

View of rear from the south.

with Hopton Wood stone. Painted decoration of the building has been done for the most part in pastel shades. Throughout, the offices have been treated in ivory colours but in the corridors and canteen considerable freedom has been used in the adoption of contrasting colours on the various walls.

Contractors engaged on preliminary contracts were:—

Demolition, S. B. Allison, Dennistoun; foundation contract, Speirs, Ltd., Glasgow, C.2; structural steel, Redpath Brown, Glasgow, C.2.

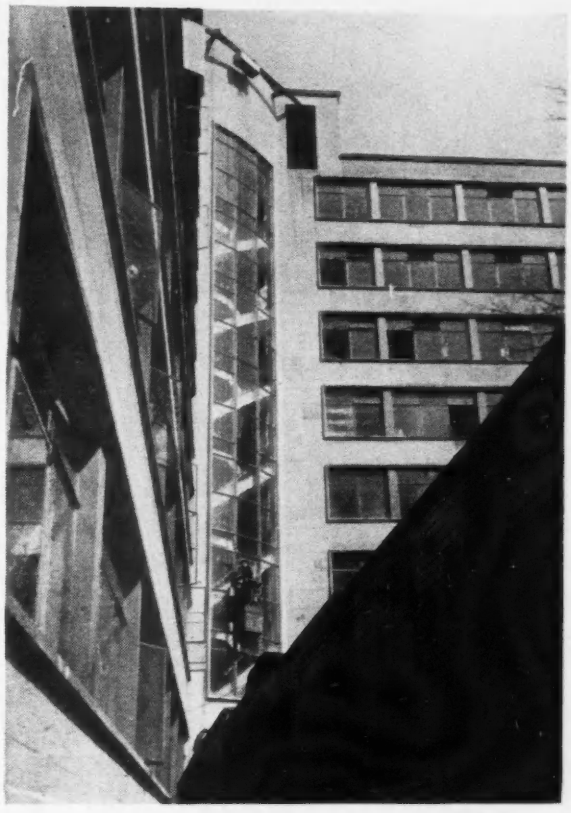
Following is a list of sub-contractors :—

Plumber, Arch. Low and Sons, Glasgow; plasterer, George Rome and Co. (Glasgow), Ltd., Glasgow; painter, W. C. Simpson and Son, Ltd., Edinburgh; glazier, James Thow, Ltd., Ayr; roof and floor units, Kleine Co., Ltd.; asphalt tanking and roofing, Limmer and Trinidad Lake Asphalte Co., Glasgow; marble work and terrazzo paving, Toffolo Jackson and Co., Ltd., Glasgow; metal windows, Williams and Williams, Ltd., Glasgow; fireproof doors, Mather and Platt, Glasgow; water tanks, Braithwaite and Co., Ltd., Great Bookham, Surrey.

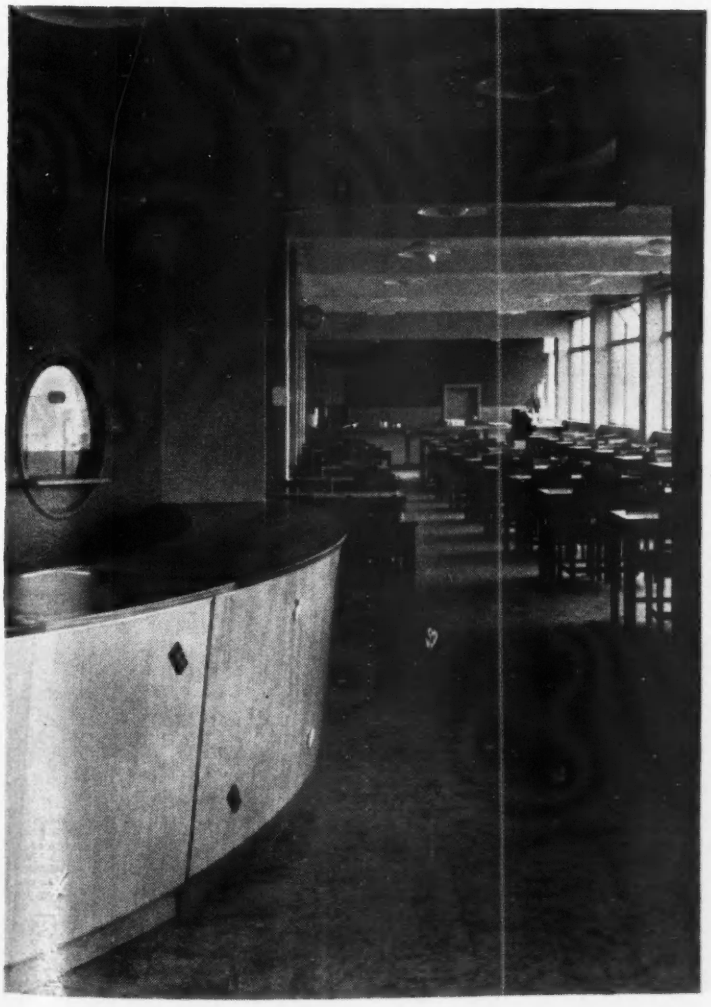
Aluminium doors, J. Starkie Gardner, Ltd.; Accotile floors, Neuchatel Asphalte Co., Ltd., Glasgow; rubber floor, North British Rubber Co., Ltd., Edinburgh; stair railings, William Govan, Glasgow; wood hand rails, J. Cochrane, Glasgow; bronze and plastic notice plates, Remploy, Ltd., Glasgow; ironmongery, etc., Phillip and Martin, Edinburgh, and W. K. White, Ltd., Edinburgh.

Engineering sub-contractors :—

Heating and hot water and electrical services, Matthew Hall and Co., Ltd., Glasgow, E.3; ventilation services, Jas. Combe and Son, Ltd., Glasgow; lifts, Waygood-Otis, Ltd.; heating boilers, Charles McNeil, Ltd., Glasgow, S1; oil burning equipment, Nu-Way Heating Plants, Ltd., Droitwich; automatic temperature control equipment, Rheostatic Co., Ltd., Slough, Bucks.

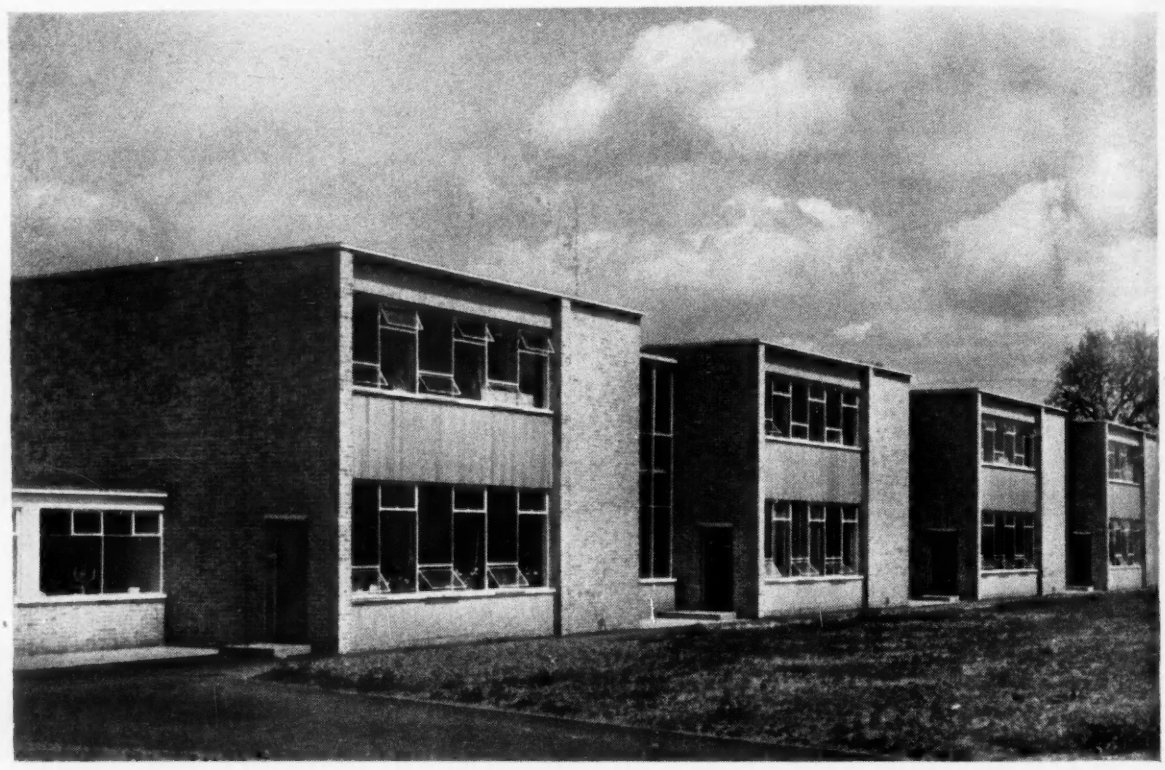


Main staircase window.



Canteen.

"MONTROSE HOUSE," GLASGOW



General view of the junior school teaching wing.

MELBOURNE PARK COUNTY PRIMARY SCHOOL, CHELMSFORD

Essex County Architect
H. CONOLLY, MA, FRIBA, MTPI

Deputy County Architect
D. SENIOR, FRIBA

Assistant County Architect—Education
W. C. B. SMITH, ARIBA

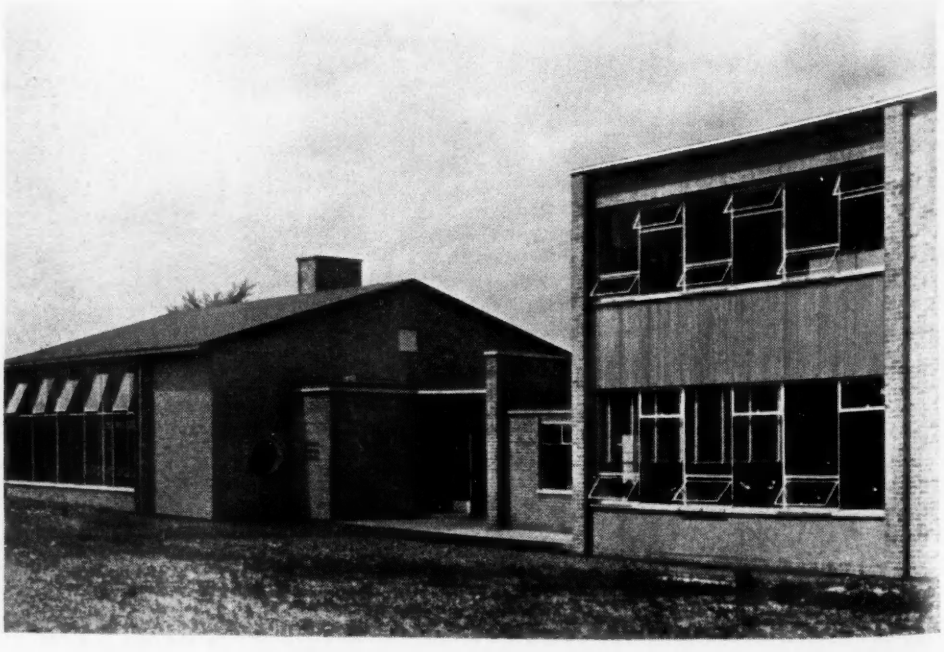
Senior Sectional Architect
N. P. ASTINS, ARIBA

Assistant Architect
MRS. D. M. NICHOLS

Chief Quantity Surveyor
S. H. FOX

Consulting Engineer
B. J. NICHOLLS

Builders
V. G. SELWOOD & CO.



Junior school assembly hall and principal entrance.

THIS school is for 320 juniors and 240 infants, and was a project in the 1950-51 Essex school building programme.

While the junior school is planned quite separately from the infant school, the two are connected by the dining accommodation and kitchen. The dining-room is so planned that it can be thrown open to both the junior and infant halls and thus make one vast area for special functions. For normal use the spaces are divided by heavy decorative curtains.

The junior teaching wing is on two floors, and the remainder is single storey. The buildings are steel-framed with stock brick facing, and with *in situ* reinforced concrete mid-floors in the two-storey blocks and wood-wool and felted roofs throughout.

Every classroom has a floor area of more than 650 sq. ft. including the recess containing shelving and a sink. All furniture and chalkboards are movable, so as to afford flexibility of layout for group teaching. All classrooms have radio run from a central control and all windows facing south have aluminium Venetian-type blinds.

The assembly halls have no fixed stages, but each has a set of Essex flexible stage units which can be built up to give a wide variety of platform shapes in any position. A change in floor level enables part of the dining-room to be used as a fixed stage to the junior hall.

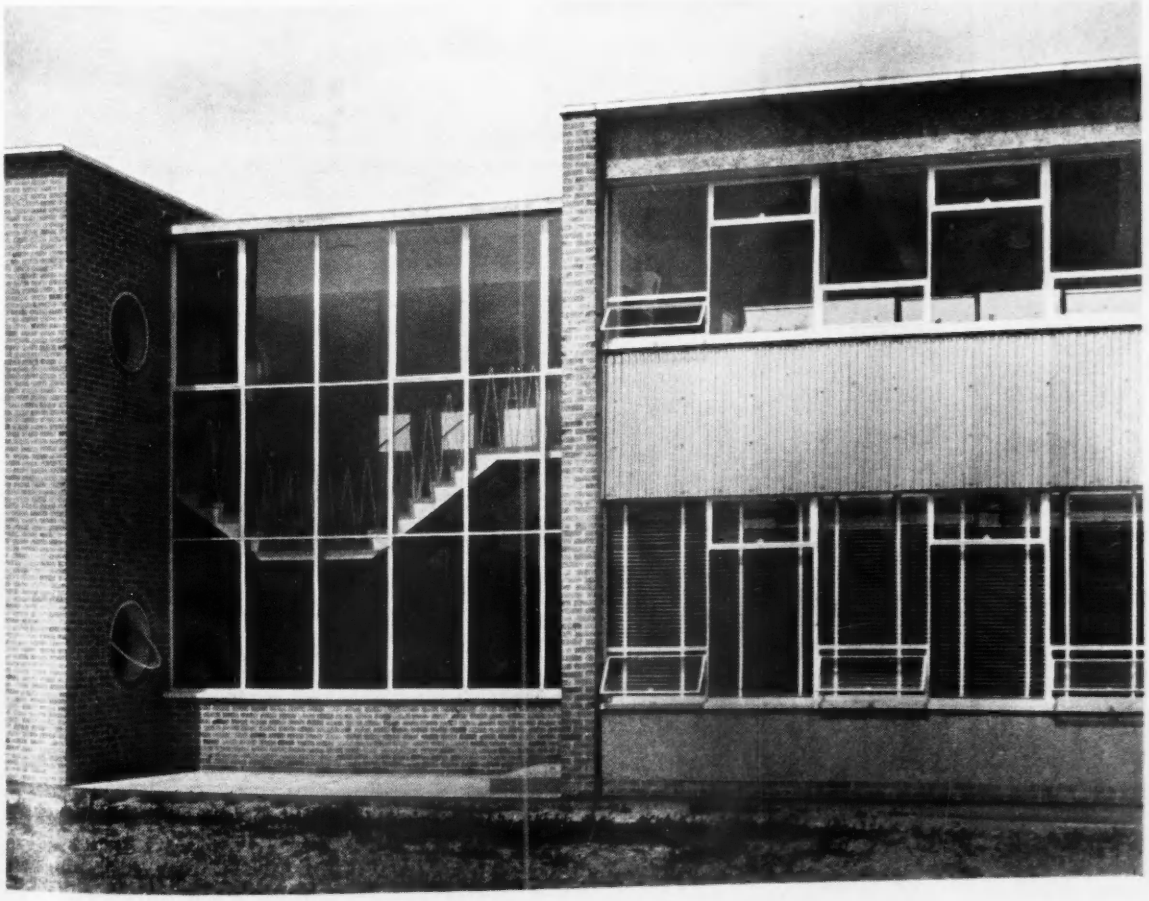
All services are in overhead ducts, faced externally with aluminium sheeting. Colours throughout are designed on the Munsell colour system, giving strong colour concentration at focal points, with patterned wallpapers of contemporary design in selected places.

The buildings are planned to an overall floor area of 47 sq. ft. per place (at a time when the Ministry of Education allowed 55) and were provided for a cost figure well within the allowable Ministry of Education limit.

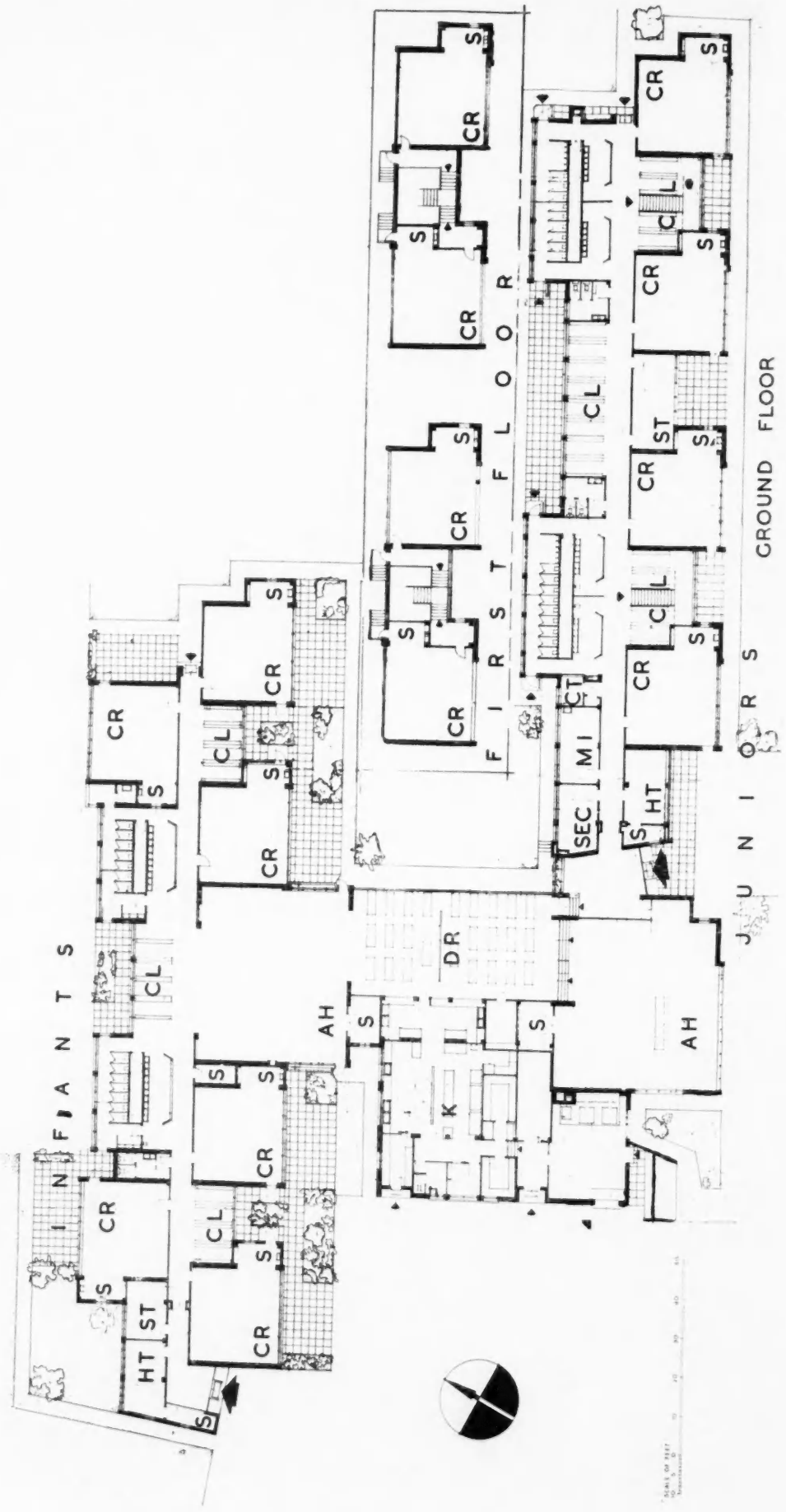
Principal sub-contractors were as follows :—

Structural steel frame, Dorman Long and Co. ; metal windows, Crittall Manufacturing Co., Ltd. ; electrical work, Eastern Electricity Board ; heating, Watkin Heating Co., Ltd. ; cloakroom fittings and ironmongery, Comyn Ching and Co., Ltd. ; roofing felt, Super-Phalt, Ltd. ; sanitary fittings, B. Finch and Co., Ltd. ; terrazzo partitions, Standard Pavements Co., Ltd. ; wood block floor, Horsley Smith and Co. (Hayes), Ltd. ; Venetian blinds, J. Avery and Co. ; roller shutters, Shutter Contractors, Ltd.

Lettering, The Lettering Centre ; cement wall glaze, Cement Glaze, Ltd. ; staircase balustrades and gates, Light Steelwork (1925), Ltd. ; asbestos spray, Turners Asbestos Cement Co., Ltd. ; suspended ceilings, H. W. Cullum and Co., Ltd. ; suspended duct, Eastwood Specialists ; floor tiling, Carter and Co., Ltd. ; playgrounds, Constable Hart and Co., Ltd. ; fencing, Brown and Son, and Penfold Fencing Co., Ltd.



A view of the staircase and classroom block, junior school.


INFANTS
JUNIORS
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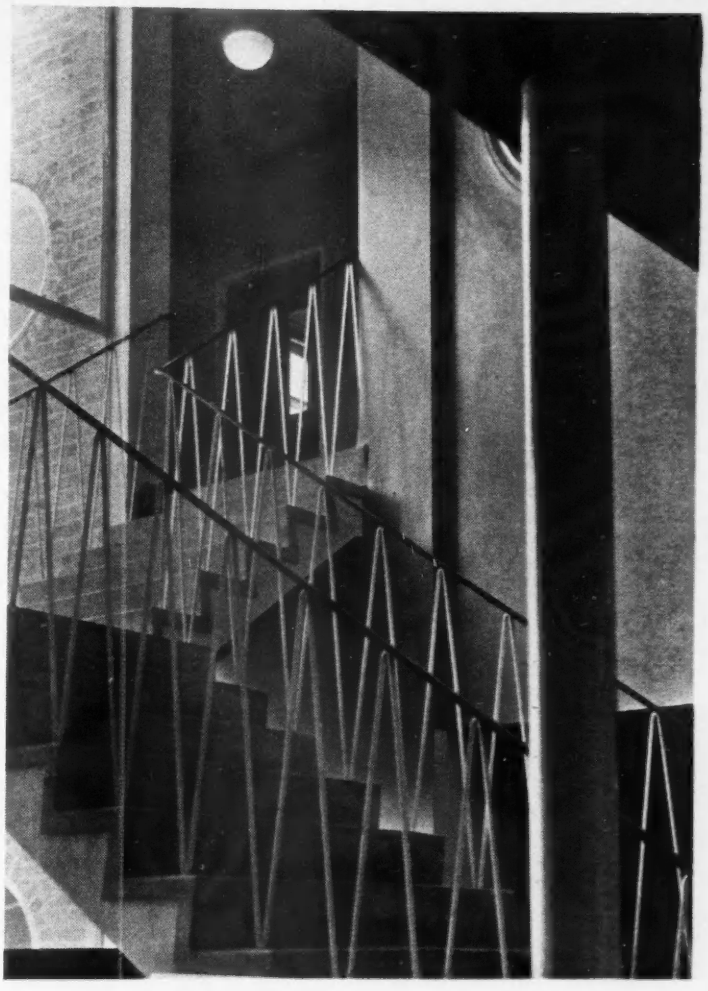
MELBOURNE PARK COUNTY PRIMARY SCHOOL, CHELMSFORD



Staircase in junior school

Assembly hall looking towards joint dining-room.

SCHEME FOR 11-STOREY FLATS AT TILE HILL, COVENTRY

City Architect
DONALD E. GIBSON, CBE, ARIBA

Deputy City Architect
FREDERICK POOLEY, ARIBA, AMTPI

Principal Assistant
E. C. TORY, ARIBA

Chief Assistant
GEORGE GREY, ARIBA

Builders
G. WIMPEY & CO., LTD.

View of Model

THE Coventry City Council has given approval to a scheme for the erection of three blocks of 11-storey flats in the Tile Hill Neighbourhood Unit. Each block will contain 33 flats and will be built in the centre of the woods around which the neighbourhood unit has been built.

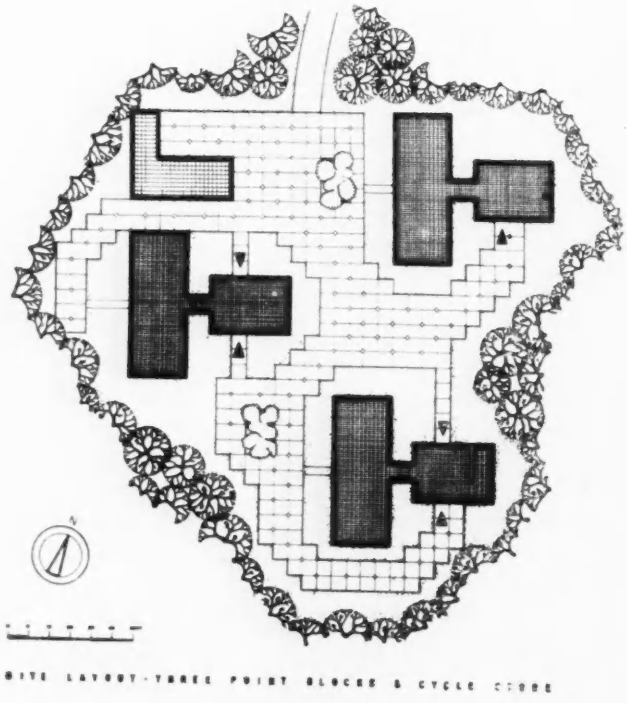
Messrs. G. Wimpey and Co., Ltd., are to be the contractors and the flats have been designed by the City Architectural Department to take the fullest advantage of their constructional system.

"No-fines" panels will form permanent shuttering to r.c. beams and stanchions which have been arranged in the simplest possible manner. The repetitive use of large shutters to be lifted by a tower crane is reflected in the plan form.

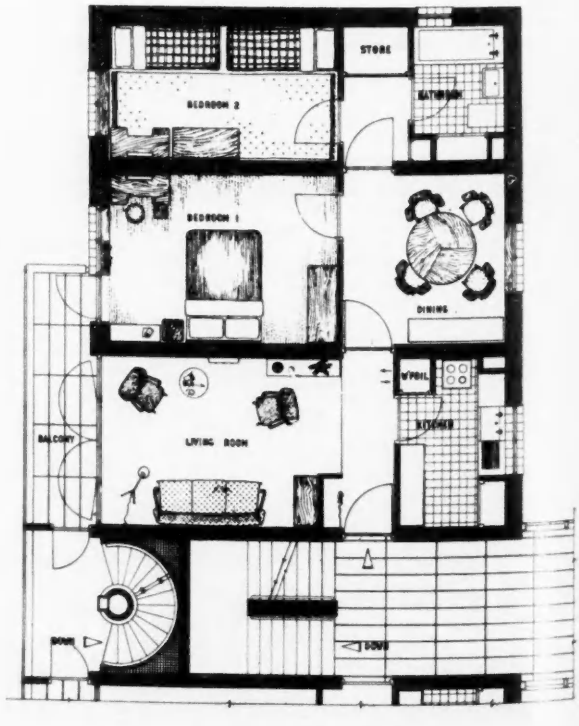
Warm air from "Weatherfoil" cabinets provides background heat to all rooms; domestic hot water is constantly available and each flat has a small washing machine and drying cabinet.

In order to economise in expensive lift machinery the skip stop system has been extended and lifts only stop on the ground, third, sixth and ninth floors.

Work is expected to begin within a few weeks and the whole scheme should be completed within 18 months.



Layout plan.



Plan of typical flat.

HOUSE DESIGN AND ITS INFLUENCE ON BUILDING COSTS

Results of a Survey

By E. T. HAWKESWORTH

In the following article are set out the results of a survey made by the author over the past three years into the relationship between housing design and building costs. The conclusion is reached that it is not progressive to insist, on the pretext of financial realism, that the present standards of construction and space be reduced still further while such extremes of labour and material costs as have been found exist for similar domestic structures.—ED.

THE design, layout and equipment of houses built during the post-war years, especially in the period under review, i.e. 1948 to 1950, has borne a definite relationship to their final costs. In many cases the amount and high standard of equipment supplied have been responsible. In others, costly details in design, following a desire on the part of the local authority to introduce such detail—a desire prompted by many reasons—has been responsible. In addition, the plan and elevation may bear some personal imprint not always related to economical design, for low-cost housing does not permit the expression of personal refinements of style.

Conversely, there is the mechanical approach to the problem, invariably a repetition of design, utilising a non-traditional method of construction in a dubious effort to reduce labour costs, with insufficient attention given to site layout, proportion, material colour and texture, the whole resulting in a complete loss of aesthetic standards and amenity. Between these two extremes there may be laudable efforts by the responsible authority in certain areas to insist on the use of selected local materials, but unfortunately associated in many cases with high cost. By reason of a combination of these varied circumstances a house design can be subjected to a number of conflicting opinions, each with a different objective in view. Finally, the design emerges only to be compressed and related, often in a very rigid fashion, to the designs and principles of guidance laid down for the benefit of local authorities in the Housing Manual and its subsequent amendments.

It is the purpose of this article to examine such apparently conflicting principles from the information obtained by a personal inspection of plans and site drawings supplied by local authorities, architects and surveyors, and from discussions with contractors taking part in a recent survey of building productivity from October, 1950, to November, 1951.

Layout of the Site, Grouping of Buildings, Blocks or Terrace, Drainage, Site Economies Illustrated by Contracts from the Survey

Between the eighteenth century and the early part of the nineteenth century the most conspicuous feature of English domestic architecture was the development of the square, a compact arrangement of modest narrow houses, nearly all identical in design, with a central communal garden, examples of which are to be found in most of the principal cities of England. This method of building, however, suffered a decline with the introduction in the second half of the nineteenth century of the villa, which became part of the English tradition, with its advantages of privacy and seclusion.

Such a form of construction was expensive, and the villa itself gave way to the semi-detached house, a compromise of three garden walls and a fourth shared with a neighbour. The semi-detached house became and remains the standard form of dwelling in the opinion of many people to-day, even to the extent of creating prejudice against the earlier form of building, a row of contiguous houses, now described as a terrace. This general objection still exists, and only in recent years has any effort been made to reintroduce continuous building in this form, and at the same time create an interesting site layout.

It was observed during the survey that many local authorities had returned to this original tradition with houses in short terraces built to three sides of a square with large uninterrupted grass areas in front of the houses. Fencing and expensive dwarf walls were eliminated and the effect of spaciousness was very attractive, especially where the site possessed a few original trees protected during building activities. On one such site where these methods had been employed the local authority had also accepted responsibility for the complete garden frontage, the sowing of lawns, and general seasonal maintenance.

The tenants' reactions were very mixed; principal complaints emphasised the impossibility of keeping children and animals to paths and, as might be expected, the lack of privacy. It was generally admitted, however, that the estate would, when the initial rawness had passed, become a development of value to the neighbourhood. Many other sites offered examples of the imaginative handling of mass, for with the urgent need for economy in materials, a distinct revival of interest in terrace construction has taken place, which by skilful planning offers accommodation free from the original objectionable features described as:—

(1) Lack of privacy.

(2) Noise.

(3) Daylighting difficulties owing to absence of windows on the third side of the house.

(4) Problem of access to the back door.

The financial benefits of terrace construction are generally known, and cost comparisons with the conventional semi-detached house have been studied and made available to the building industry.

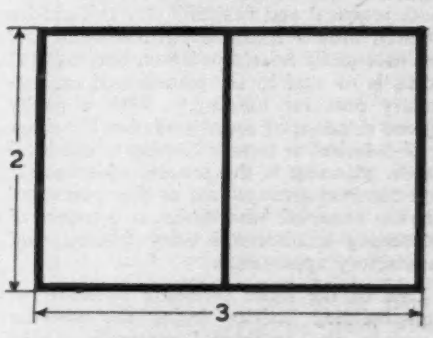
That layout as described is influenced by existing land contours of the site to be developed is recognised, but careful consideration must always be given to the need for maximum economy in site levels,* foundations and drainage.

* Technical Appendices, "Housing Manual," 1949. Appendix D and J.

One manner in which savings together with efficiency may be secured is in the matter of drainage.† Too often has this subject been treated as a separate requirement or unfortunate necessity. Several sites gave evidence of needless and costly expenditure in this direction. On one estate with a dual system for soil and rain water each house possessed an average of three Y connections to the main drains, with an additional rain water system for the front roof slopes taken into soakaway pits. On another estate with steeply sloping ground requiring invert depths to an extreme of 8 ft. the connections of a group of branch drains were taken to a deep manhole. Although it is not an original idea, the interposing of a shallow manhole to receive these branches, with a single steep connection to the main drain, providing there is no interference with the flow level, is worth consideration, for any such savings will help to reduce total costs. The use of trapped gullies for rain water disposal is still a practice in some areas, and on this minor point no objection could be raised to a direct connection between downpipe and drain. The need for further practical research on this subject is indicated, particularly on the performance of the one-pipe system, joint outlets for waste between pairs of houses, permitting a reduced number of connections to the main drain. Details of the performance of existing drainage systems is also required to supplement the information already available on this subject.‡

Plan and Elevation, Treatment of Elevation, and Economies to be Obtained by the Use of a Module

From the numerous variations in house design that have been used during the period 1918 to 1952, a number of features have emerged which form the basis of the house designs now generally accepted as being the most economical or practical in use today. Initially a three-bedroom semi-detached house is considered to be cheaper to build if the following simple formula is used. (Economical House Design, E. Gunn, 1932.)



Such economy can be increased further by study of the relationship of external walls within reasonable limits of frontage and depth, although it should be stated that a site in Birmingham which gave evidence of the highest productivity made use of a completely square plan, normally considered expensive, with an additional structural cost incurred by installing a soil and waste system complete within the house. This example should not obscure the fact that thought must be given to certain minimum dimensions—*e.g.*, staircase, landings, and

† "Building Drainage, Plumbing Research and Development." By F. L. Barrow, BRS. "One Pipe Plumbing, Some Recent Experimental Hydraulics at BRS." By A. T. E. Wise.

‡ *Ibid.*

height of rooms—as additional space by area within the house is of greater value to the tenant than cubic capacity at ceiling height.

The treatment of elevations by the use of standardised steel casements (BS 990, 1945) and the emphasis obtained by architects by the introduction of long narrow horizontal frames in an effort to obtain a pleasing fenestration associated with a low-pitched roof, must inevitably be costly in the provision of extreme lintol and cill lengths which are expensive, and do not add to the daylighting which a deeper casement of equal area will give at a much cheaper cost. At this point economy and design are at variance. If appearance and purpose are to be more closly related, efforts should be made to establish not only the most practical measurements of distance between blocks, length, depth and height of both semi-detached and terrace houses, and for the door and window openings, but also the proportions which give the most aesthetic satisfaction. Efforts in this direction were apparent on a site at Esher, and the sense of natural repose and visual interest was very satisfactory, for such features combined with the colouring of the walling material offer the principal means of external variation and interest today.

It therefore follows that a building may be scientifically safe and secure, the different surface areas and room shapes skilfully balanced to withstand normal strains and offer the maximum accommodation, yet such skilful arrangement may not be apparent and the design appear complicated and puzzling. Such a reaction can be based on visual incongruity, *e.g.*, as described above, a roof structure apparently supported by long, narrow, slender metal window frames placed immediately under the eaves; heavy precast door hoods bearing upon metal tubes; or mean fascias and soffits. Examples were also observed of massive canopies and parapets at eaves level, costly in labour and requiring mechanical aids to place into position. At this stage it becomes difficult to mark the point where the scientific contribution to house construction moves towards or away from the architectural conception of what is both practical and beautiful, for this elusive quality, almost incapable of definition and not necessarily related to labour and material costs, is so vital in the planning of contemporary post-war housing. With a finally agreed standard of accommodation for either semi-detached or terrace housing to suit local needs, planning is the process of economic and compact arrangement of the rooms and services required, with design as a means of expressing architectural unity, interest, and satisfactory appearance.

One of the more fortunate outcomes of housebuilding activity during the post-war years in the traditional materials is the general reform of manners in design brought about by architects moving away from the pre-war speculative builders' "picturesque" and tasteless styles of elevation to a more modest and simple treatment, in which the use of brick has played a very important part, and it is felt that this natural material will make an even greater contribution in the future.

Brick and the Use of a Module

Brick, despite local shortages, and the fact that as yet it has not been possible to obtain the pre-war scale of production, remains generally the most economical and easily handled material for house building. The small size of the unit results in ease of handling by the bricklayer, and adaptability to meet most normal demands of plan. The practical application of a building module* might well assist this material to regain its eminent pre-war position.

It may not be opportune at the present time to introduce yet a further brick size, for there are now available some eight sizes of facing brick, but there is no doubt that with the economic benefits obtainable by the use of a module, the establishment of certain basic dimensions, described below, would be possible. The speed of building can hardly be impeded by the fractional change in size required by a modular brick, for a bricklayer is quite capable of making allowance for the slight variations in length of any clay brick he may be called upon to lay. Furthermore, the use of a module would prevent such operatives working in a haphazard way; and reduce time wasted to a minimum. In the field of design the following suggestions are worth considering:

(1) A storey 8 ft. high to include floor or ceiling joists.

(2) Standardized spacing of bathroom and sanitary fittings to permit greater use of very simple plumbing assembles, not likely to be damaged by handling on the site.

(3) Disposition of economical window openings, these to take *either* steel or wood casements, for even today there is no agreed standard to permit the use of alternative frames.

(4) Finally the use of a 10-in. cavity wall (4 in. +2 in. + 4 in.) completely in brickwork if need be, or with the inner leaf only in a light-weight load-bearing material possessing high thermal insulation value.

The advantages of such a method of construction† are an immediate reduction in the amount of mortar used, brick weight, and handling charges. If the house perimeter measurements were maintained an additional 10 ft. super could be made available to an average 800 ft. super dwelling without extra cost. It is as well to mention at this point that whereas the size of a brick is an asset in many respects, it becomes a liability when the problem of handing on a site is investigated. It will be necessary to develop and increase the use of mechanical aids in order to meet this problem and obtain real economy.

This digression from the subject of design into mechanical aids serves to illustrate how the choice of a basic material such as brick, the cheapest manufactured building material, brings attendant difficulties not always considered by an architect but a source of constant concern to a contractor. Capital outlay for equipment capable of mechanising the process of handling between kiln and site would be prohibitive. At the present time deliveries of the ubiquitous fletton are made by the same method whether for three thousand or three million bricks. The use of mechanical equipment specially designed in co-operation with brick manufacturers for unloading from road transport on sites requiring very large quantities of bricks would free unskilled labour to unload and handle at smaller sites in the conventional manner, or with the assistance of more modest devices. Finally, the development of light-weight structural clay products would merit further study, especially the roast sawdust-clay or furnace ash compositions which successfully combine reduction in weight with freedom from cracking and distortion when kiln fired. Here may be found an additional walling unit that possesses a good weight/strength ratio, is adequate in section, speedily erected, weather resistant, and possessing some measure of aesthetic quality.

Materials, Effects of Shortages, and Costly Non-traditional Substitutes

Materials are always a vital feature of house building because economic success and aesthetic considerations are dependent upon their right use. In the flight from brickwork, and the post-war search for satisfactory and economical non-traditional methods of construction, the supply of materials obviously exerted a profound effect upon design. It is right that such technical experiments be made in building construction if only to evaluate by comparison how costly in labour, materials, and future maintenance such non-traditional methods may be. There is evidence extending back to the 1920's, when similar post-war difficulties existed, that such a variety of method and thought confirmed but one conclusion: *a reduction in building costs by economy in either labour or material cannot be achieved by non-traditional means.* So-called new methods exist only by reason of shortages, and seldom by reason of any inherent qualities they may possess.

Where such methods of construction have been adopted, special problems with regard to amenity and layout arise, caused by repetition of harsh mechanical surfaces and house types. To overcome this difficulty many local authorities have compromised by mixing such houses with others of traditional materials. The resulting effect, unless very skilfully planned, creates a feeling of restlessness and lack of harmony. The fact that terrace and semi-detached houses are amongst the smallest self-contained units of building increases the problem of obtaining technical efficiency associated with good design from the existing natural materials available. In low-cost housing to-day an architect is restricted by narrow limits of cost. Care must, therefore, be exercised that durability, strength and form are not sacrificed in attempting to avoid the natural restraint in shape that the use of proven traditional materials impose upon structure. Economies should not be obtained by a progressive reduction in material content in an effort to save labour, whereby external walls are reduced to light-weight partitions of excellent thermal qualities, but ineffective against the penetration of dampness through shrinkage cracks, pattern staining and similar defects. Similarly, internal walls can and have been reduced to thicknesses which offset material savings with acute problems of noise transmission and fire hazard, with little hope of remedy except at prohibitive cost to the local authority concerned.

Effects of Material Shortage and Variation Orders During Building

Many theories are advanced at the present time on the subject of house planning or design and its influence on productivity, and

* British Standard No. 1708: Modular Co-ordination, 1951.

† "Principles of Modern Building." Vol. 1. By R. Fitzmaurice, 1939, HMSO. Page 171, para. 17: "Cavity walls may be constructed of various combinations and thicknesses of brickwork"; also: National Building Studies. Technical Paper No. 1: "A Work Study in Blocklaying."

how even further economies may be made in low-cost housing. Many such theories have yet to be reduced to practice, for low-cost housing is unfortunately a subject very susceptible to opposing points of view. The pre-war speculative builder felt competent to both design and construct a complete estate and does not readily accept the function and direction of an architect in the design and layout of municipal estates to-day. Such a point of view is understandable when the contractor is confronted with excessive variation orders issued during the period of building. The extent of these alterations in the sites reviewed during the productivity survey was as follows:—

Number of sites with evidence of variation orders	*Type of contract*	*Number of sites overall*	*Percentage*
57	By tender ...	95	60
57	*By tender and including 92/46 schemes.	162	35

*Variation orders would not be applicable to contracts negotiated on 92/46 method of tender.

The number of variation orders on any one site range from as few as three to as many as 76, and it is unfortunately not possible to determine which variations were caused by inevitable shortage of material and which by belated change in plan or design. It was thought at the time that the subject did not merit close attention, but the disruptive effect upon a contractor conscious of material and labour costs, and striving for the swift production of houses, may well cause an unjustified and concealed increase in man-hours and final costs, and result in ill-feeling between architect and builder. Architects must give a lead in this direction and establish at the earliest possible occasion efficient collaboration with the contractor, *as all production charts, costing systems, progress tables, etc., are negative processes until this mutual respect is demonstrated.*

Generally it may be said that an architect by reason of training is inclined to visualise his work as a completed whole rather than a study of building in every trade and aspect. Several sites have been reviewed where satisfactory and economical internal plan has been a secondary consideration to a pleasing elevation or elaborate house shape, for it should be noted that any deviation from a simple rectangle or square immediately causes an increase in costs not related to size, or the space made available. Low-cost housing certainly does not permit architects to demonstrate distinctive personal detail.

The use of certain surface finishing materials in industrial areas not suitable for their application has had some very unfortunate results. In the north-western region many examples of the use of rendered brickwork, either to house fronts or complete first-floor walls treated with cement paints or other decorative finishes, were observed. The heavily polluted atmosphere had caused severe staining and in some cases disintegration of the decorative surfaces which would necessitate frequent attention to maintain a reasonable appearance. It is considered that local authorities actively concerned with such a problem should make greater use of the information on the subject to be found in National Building Studies or BRS Digests, rather than attempt to obtain distinctive appearance of so uneconomic and temporary a nature.

Actual Construction Standards, Expensive Detail. Further Examples from the Survey

Standards of accommodation required in local authority housing were established during the inter-war years 1918-1939. The recommendations of the Tudor Walters committee (1918) were subsequently implemented by the various housing acts of the Government in power at the time, and the most recent authoritative publication on this subject is the now famous Dudley Report *Design of Dwellings*, published in 1944. During the pre-war period considerable scope was given to local authorities to vary their plans to suit the needs of housing requirements in their own areas. Emphasis in policy was placed on three-bedroom houses providing accommodation for five persons, and only in the recent post-war years have determined efforts been made to meet the needs of smaller family groups, aged persons, etc., on a large scale. The recently published *Housing Manual, Second Supplement*, 1952, revised standards of space below those of the Dudley Report, and expressed hope that living areas would not fall below the further detailed minimum sizes given. Suggested economies were the elimination of the second wc outhouse structure, and reduction in the internal circulation space. Provision was made for the use of a simple store either as an addition to the hall or provided outside the house area. The cogent reasons advanced for such a reduction in space and amenity were:—

(1) Economy in building materials and labour with an anticipated increase in numbers of houses built as a result.

(2) Economy in fuel consumption.

(3) Greater density of houses within a given area.

(4) Reduction in rents.

Such houses, although showing immediate reductions in building costs when compared with previous local authority development, are, in fact, expensive when every aspect of construction and tenants' needs are examined closely, although it must be conceded that many of the houses built during the period reviewed show evidence of uneconomic plan, extravagant design, and misuse of materials.

The original principles of good design described above must be carefully considered, for the permanent nature of house building does not normally allow for the provision of subsequent structural improvements that experience of these revised standards may make necessary. It would then appear that there is a definite minimum in house accommodation which, if reduced still further for any reason, offsets the initial saving in labour and material with an increase in effort necessary to maintain the home in either domestic comfort or good repair. How near we have approached this minimum only experience of the new houses being built to these revised plans will reveal. It is a generally accepted point of view to-day that building costs are becoming greater than the tenant or purchaser can afford. This, however, cannot be held to be a valid argument, nor should it be used to lend support to a policy of reduction in the size and standards of a house while such extremes in labour input to an average three-bedroom traditional house range between 1,565 and 4,650 man-hours, representing a difference in the cost of labour alone of £345. Specification, work content and other measurable factors account for 50 per cent. of this difference, but it would be fair to state that the reason for the remaining 50 per cent. lies in the hands of the designer and contractor. In this direction many sites gave evidence of expensive detail not always associated with structural need.

Economies Within the House by Design, Change in Technique and the Use of Certain Alternative Materials

In the field of design thought might be given to the use of the valuable, and at the present period, wasted roof space in traditional housing. An architect who can create more working or living space within a house is quite as economical as the contractor who succeeds in building for less cost. With the general introduction of a low-pitch roof and the resultant decrease in loft headroom which would rule out the possibility of providing further accommodation in the roof proper, suspended plasterboard ceilings to the first floor now appear uneconomic and purely decorative. Modern plumbing does not demand a roof storage tank, nor roof construction the conventional timber truss, more so in view of the decline in use of the mansard roof. In this direction a camp ceiling would take every advantage of the roof space available, with the roof principals obtaining support from extensions of the spine or division walls.

An incidental economy in roof construction can be achieved if chimney stacks rise directly through the ridge. By this means chimney gutters are avoided and the necessary height obtained with a minimum of exposure and cost in facing bricks. Roofing work is simplified and the design strengthened. This is a simple point, but was frequently overlooked in the plans reviewed.

Changes in Technique

Further economies associated with house design but obtained principally by changes in building technique have been investigated, and support for their use has been found by practical experience. Following are some examples:—

1. *House foundataions to dpc level.*— Alternative methods for the construction of house foundations have been the subject of considerable study in the past, and the overall economies obtained by reducing the number of operations to a minimum are fully described in an early paper.* A summary in appendix J of the technical appendices to the *Housing Manual* detail the minimum number of operations as six with a maximum of 12. Such differences are not wholly due to site considerations, and design is a factor largely responsible. Bearing in mind the site and soil conditions, an estate which is situated within easy access to good supplies of cement, sand and ballast, the use of a continuous oversite slab foundation extending to the face of the external wall may offer economies equal to the reduction in excavation, the labour in placing small quantities of concrete, and the brickwork saved. At one site visited large solid concrete blocks 18 in. by 9 in. by 6 in. were used to dpc level and projected approximately ½ in. from the brick face to form a solid and well-proportioned plinth. The appearance was most satisfactory, and the contractor stated that this method of construction was very speedy, as the two courses of walling units did not require any mechanical aids to place them

* "Economy in Traditional Housebuilding." By H. F. Broughton and N. S. Pippard, 1950.

into position. Furthermore, construction times for external walling will show improvement if careful thought is given, as described above, to the relationship between all openings, and the use of simple room shapes. High productivity sites offer definite evidence of the benefit obtained by reducing brick cutting and labour to a minimum.

2. *External decorations.*—It is in this trade that extreme variation in man-hour input can be found. The range from the survey was from 73 to 690 man-hours. Both these extremes, however, possess features which are abnormal and should be so considered; nevertheless, the average time is 233 man-hours. Painting is a trade in which, as in brickwork, carpentry, and house foundations over 50 per cent. of the work is carried out by the main contractor, and here the recommendations in Code of Practice 231 (1952) Painting, cross reference 3.307, for the decoration of steel window frames, "Such frames should be well primed and perhaps given an undercoating before glass and putty are inserted," would effect considerable saving in man-hours if widely adopted or even extended to permit the complete painting to be carried out and the glass to be sealed in the frame with a colour matched quick-setting putty now generally available. Apart from reducing the time spent in laborious work on narrow widths, it would offer a better key for the putty, and reduce corrosion from moisture penetration.

3. *Internal plastering.*—Minor economies are possible in this trade without discussing the specification that may be insisted upon, by the introduction of bull-nose angles to window reveals and internal walls, and the use of ceiling board instead of plasterboard, finished with the conventional skim coat.

4. Finally, there is an example of the use by a local authority in the Midlands of a joint outlet for soil and waste between pairs of houses. Such a saving, however, imposes upon the architect fixed positions for services, and, as with many such economies, what is gained by the saving of material is more than outweighed by the loss of freedom in the disposition of the living space. However, this example does serve to illuminate the theme of this article, that new standards of plan and design must prevail even to the extreme extent of the final point which is domestic and complementary to house design, for it requires a sociological change in attitude towards the use of living space, particularly bedrooms. At the present time the upper floor of a house is virtually unused during the greater part of the day. The space occupied by bed fittings is one tenth of the floor area of an average three-bedroom house. Where young children form part of the family, the use of dual-purpose furniture might be considered. Well designed units of furniture, capable of being fitted or related to one another are available, far removed from the general conception of a bed in a cupboard. It is unfortunate that so little discrimination is exercised in this direction by the purchasing public.

Summary of General Principles

It has been stated with conviction by responsible authorities concerned with a sound housing policy that the fundamentals of good design are good layout of the site, good arrangements of space within the house, adequate equipment and satisfactory appearance. Each of these requirements is closely related, but experience has shown that on the post-war estates reviewed these principles have not received the consideration they merit. In addition to these visual and structural standards, there is now the pressing need for even greater economy in materials and labour which must exert an ever-increasing influence on house design. Bound as we are at the present time by these economic restrictions, the necessary austerity could be most favourable to the production of simple satisfactory design. Such economies as are made, however, must always be linked with efficiency which in a house means simply the performance of the function the house is built to fulfil. It should be emphasised that sound initial design allied with good structural standards is vital. Much vaunted saving obtained by omission and reduction in fittings and space, or by hasty modification of existing plans by scaling down, cannot be considered a true economy in building. This is so particularly if such savings result in heavy maintenance costs.

With these urgent requirements in mind it is necessary to detail at this stage what may be called the practical elements of house design, which permit an architect to produce in conjunction with contractors, plans and specifications flexible enough to take advantage of local labour and supplies of materials available in the area. House building is not design and construction in two separate phases; these functions must be correlated at the earliest stage, so that benefit and advantage in speed of construction is gained from the joint knowledge, local and technical, of the designer and contractor. Such collaborative achievement would be further assisted if the following broad principles were also given consideration:—

(1) Architects to assume greater responsibility for the preparation of fully-detailed or diagrammatic drawings.

(2) Elimination of complicated detail.

(3) Progress of contract not to be interrupted by ill-timed variation orders.

(4) Simplification of the bills of quantities in use for housing, with greater freedom for the contractor to offer alternatives for prime cost material items if in very short supply.

(5) Regional differences of accommodation need, building labour and material supply to be carefully studied by the local authority concerned, and house plans devised and adopted that will assist in reducing the wholesale migration of labour and mass movement of materials across the country not always associated with urgent and vital public works.

(6) Avoidance of the use of different materials and techniques within a single estate or contract. This policy was only justified during the immediate post-war period with its obvious shortage of materials. At one time official approval was given in the interests of variety, but experience has shown that such changes disconcert the operative and delay output.

(7) Greater use to be made of competent sub-contractors for high productivity is more readily obtained from tradesmen who specialise in their craft, and can of their own accord carry out their section of the work competitively with a minimum of interference to the contractor's organisation.

(8) Finally, contractors to consider how the number of non-productive operations may be reduced and closer integration obtained with the remainder. In this direction study be given to the time spent in preparation required for wet processes, mass concrete to foundations, oversite, plastering, rendering, etc., cleaning of equipment and attendant labour upon concrete mixers. It is considered that a greater extension of the use of ready-mix concrete and mortar, with particular application to housing sites, would be justified. Several examples of high productivity gave evidence of the use of premixed concrete, and the reduction in labour costs, and preparatory work, and dependence upon weather, was thought by the contractors to more than compensate for the additional cost of this material.

Conclusions and Sources of Evidence

Finally, a fact that should be considered as far as pre-war speculative housing is concerned, for this appears to be the empirical measure by which the progress of the housing programme is compared to-day, is that large numbers of houses were built on compact sites, many with similar floor plans, and variation was obtained at its best by the judicious use of a small quantity of hand-made multi-coloured facing bricks in varying shades on the front elevation or, at its worst, ornate or inferior design. Sites were laid out, however, with maximum economy in frontages, paths, and particularly drainage, but little thought was given to design or labour-saving advantages, which would not offer any immediate return for the initial outlay by the contractor concerned, who confined himself to the satisfaction of one basic need; the provision of houses. Savings were also made by the purchase of standard joinery and stair fittings in bulk, and by the extensive use of sub-contracting; and the continuous work thus available resulted in high productive output on the part of the building operatives. It is clear that the reasons, financial and competitive, that led competent contractors to develop estates on these lines are not present to-day, but it is necessary to acknowledge their ability, and to accept some of their methods, particularly keen purchasing, and the use of local sources of labour and competent sub-contractors. Such ability contributes to high productivity in a manner incapable of analysis. Certain aspects of pre-war house plans that were both popular with local authorities and purchasers are worth investigating. It would not be retrogressive to select from such plans the proven economical features.

In conclusion, it is fair to state that there is no single spectacular method of determining the influence of house design or plan upon building costs; rather is it the combination of the many contributing factors which this paper has attempted to define: the initial design *without* subsequent alteration, carefully related to the site, early consultation between architect and contractor, economical and efficient site organisation, and appreciation of the use and limits of mechanical aids.

With conservation of materials and labour, the principal requirement to-day, variety and interest is obtainable by restraint, proportion, and plain surface controlled and emphasized by the natural colour of the building material used, rather than extreme variety of size, shape and structure. The point cannot be too frequently made that in familiarity of operation lies speed and saving. Furthermore, it may certainly be prudent, but it is not progressive, to insist on the pretext of financial realism that the present standards of construction and space be reduced still further while such extremes of labour and material costs as found exist for similar domestic structures. Economic and material difficulties have not the degree of permanence that sub-standard housing will possess.

BOOKS

*** Books reviewed in these columns may be obtained on application to the Book Dept., "The Builder," 4, Catherine-street, Aldwych, WC2. Cash (which should include 1s. to cover postage and packing) should accompany the order.*

PLANNING APPLICATIONS, APPEALS AND INQUIRIES. By A. E. Telling, MA, Barrister-at-Law, and F. H. B. Layfield, AMTPI. 406 pp. (Butterworth and Co (Publishers), Ltd.) Price 35s.

THIS has been described as "a readable book," which is in itself a commendation to a book concerned with the intricacies of the Town and Country Planning Act, 1947. It is too easy to adhere to the wording of the Act at the expense of the interest of the reader yet at the same time any commentary is useless without reference to the fine distinctions contained in the Act. The authors have successfully pursued a middle course by virtually dividing the book into two parts although officially it is divided into three.

The first part keeps closely to the Act, even quoting extensively from it. Little is omitted from a wide range of subjects. The section in inquiries is not construed *ejusdem generis* as relating solely to inquiries resulting from planning applications, but includes also inquiries on the development plan itself. The law is clearly stated to include among other matters enforcement procedure, highway and trunk road applications, compulsory purchase, advertisements and procedure under the National Parks, etc., Act, 1949. It is interesting to read that under the Cheshire Brine Pumping (Compensation for Subsidence) Act, 1952, the local planning authority in respect of any development in the salt mining areas of Cheshire are required to consult with the Brine Subsidence Compensation Board. A great problem of the 1947 Act is explained, but not explored at p. 145 when, referring to the power of the local planning authorities to impose conditions on consents and the possibility of these conditions being *ultra vires*, it is stated that it is difficult to say what view the courts would take of the purposes of the Act.

The second part, which comprises the second and third parts of the book, is concerned with an analysis of the Ministerial mind as evidenced by decisions. Perusal of the sections of the Act is replaced by inquiry into broad policy; namely, economic, social and political criteria which the Minister takes into account. A minute study of the actual inquiry itself should assist those whose duty it is to produce the best case possible, and they will also be assisted by Appendix 5 which contains sources of information on which many of the facts relating to development plans are based. The authors consider that it might be advisable to ask the Inspector to *sub poena* Government witnesses if necessary. There can, of course, be two views on this point as there is no doubt that consultation takes place between Government Departments before a decision is given. Builders will be interested to read how the Minister allowed an appeal in favour of a proposal to build a circular house with a low-pitched roof near Bath although the Council thought it would contrast with the vertical lines of local buildings.

In view of the fact that the importance of planning in every-day life makes some knowledge of the subject a business necessity, this book provides a relatively easy approach to the difficulties most likely to arise and the method of facing them. R. P. C.

PRESTRESSED CONCRETE. By Y. Guyon. 1953. 544 pages. (Contractors Record, Ltd.) Price £3 10s.

FEW ENGINEERS have had as much experience of prestressed concrete as the author of this book, who has for many years been associated with the French engineer E. Freyssinet, who was primarily responsible for the great development of this new method of construction in the 1930s and since. The book, with much higher mathematics, is obviously intended only for the use of specialists in concrete design. The first chapter explains in a simple manner the theory of prestressing, but generally the book has little appeal to the architect and builder, from whose point of view the book would have been much more interesting if it included more illustrations of some of the remarkable prestressed concrete structures erected in the past few years, and more detailed information and illustrations showing the methods of carrying out this new type of construction.

The calculations and examples are confined to simply supported beams, but the method is, of course, similar for other members used in construction. Also, the calculations and examples relate only to the thin wires used in the Freyssinet system, but they are applicable to other systems using thin wires as well as to the stranded-wire cables used in the USA and Germany and to the bars of up to more than 1-in. diameter used in Britain and on the Continent.

Large-diameter bars are increasing in popularity; indeed, a British system using bars of 1¾-in. diameter is being used for a bridge in the USA, which was designed by a British engineer and in which British-made high-tensile steel is used.

The first 200 pages are devoted to the general theory and properties of prestressed concrete made with pre-tensioned and post-tensioned steel and descriptions and illustrations of methods of tensioning and anchoring the steel; 130 pages deal with the design of simply supported beams, and there are appendices on shearing stresses and the stresses in the concrete near the anchorages.

This book, which was first published in the French language in 1951, is a notable addition to the literature of prestressed concrete, and will no doubt be carefully studied by those concerned with the detailed calculations of this new method of construction. H. L. C.

BOOKS RECEIVED

PAINTING AND DECORATING. By F. C. Horstmann and C. P. Thompson. (London: Sir Isaac Pitman and Sons, Ltd.) Price 10s. 6d.

BUILDING BY-LAWS—LAW AND PRACTICE. By J. F. Garner and R. S. Offord. (London: Shaw and Sons, Ltd.) Price 45s.

BUILDING SCIENCE FOR STUDENTS OF ARCHITECTURE AND BUILDING, VOL. III.—STRUCTURES. By A. G. Geeson. (London: English Universities Press). Price 27s. 6d.

HILL'S COMPLETE LAW OF TOWN AND COUNTRY PLANNING. 2ND CUMULATIVE SUPPLEMENT TO 4TH ED. By D. P. Kerrigan, R. G. C. Davison and J. D. James. (London: Butterworth and Co. (Publishers), Ltd.) Price 45s.

INDUSTRIAL DESIGN

Council's Annual Report

THE eighth annual report of the Council of Industrial Design for the year ended March 31 last, which was published yesterday, September 10 (HMSO, price 1s. 6d.), states that the period under review was one of consolidation and reorganisation following the achievements of the 1951 Festival of Britain and the expansion, and subsequent contraction, of staff necessitated by the great national exhibitions of that year, in which the Council was responsible for the selection of all manufactured exhibits.

In returning to more normal conditions of work on a reduced budget, the Council has maintained from the Festival year the selective illustrated index of current designs, known as "Design Review," which has been the principal link with a number of important manufacturing industries.

The Council's policy, in view of staff reduction, has been to concentrate upon particular sections rather than to make a general approach to industry. In the second half of the year it welcomed invitations from Government Departments to set up committees, to approve and stimulate design in particular industries. The most topical of these committees, and one that gained a great deal of publicity, was the Coronation Souvenirs Committee. The Council was also invited to co-operate on the Coronation Medals Panel, set up to encourage a good standard of design in Coronation medals. Similar invitations were received to assist in the selection of designs for postage stamps for the Coronation and the new reign.

At the request of the Ministry of Transport, prompted by the Royal Fine Art Commission and the Royal Fine Art Commission for Scotland, the Council established a Street Furniture Committee to stimulate better designs of lamp posts. The responsibility for approving lamp posts has initiated work in the whole domain of street furniture, and has brought the Council into useful contact with local authorities.

Opportunities to renew contacts with industry arose towards the end of the year in the shape of selective exhibitions overseas. The report states that the Council looks forward to participating in more of these both as a direct means of influencing manufacturers towards higher standards of design and as effective promotion of British export trade.

There is now much evidence, the report continues, that the Council's work with the retail trade, particularly in furniture and soft furnishings, is producing substantial results. The number of shops stocking better designs has greatly increased and public interest in these higher standards of design has been well marked. A comparative exhibition staged by the Design and Industries Association at the end of the year at Charing Cross Underground Station, though by no means conclusive, suggested that, given a wider showing in shop windows, good design in home furnishings would have a strong popular following.

This interest in design has again been greatly stimulated by well-informed comment in the Press. The Council's approach to education authorities has been effective in maintaining contact with school teachers and adult education organisations.

TOWN AND COUNTRY PLANNING

Summer School at Bristol

The Town and Country Planning Summer School, which is at present taking place at Bristol until tomorrow, September 12, is being held under the auspices of the Town Planning Institute. The objects of the School are to provide an opportunity, during a brief period each summer, for the discussion of principles and methods of town and country planning and kindred subjects; to enable those engaged in the practice of town and country planning to exchange views regarding their several experiences of its administration and application; and generally to promote education in all matters relating to the science and art of planning in town and country. The following extracts are taken from three of the papers which have been presented at the Summer School during the week. The chairman during the week is Sir George Pepler, CB, PP.TPI.

Central Areas

"NOT only in housing, but in many of the activities with which town and country planning is concerned, as much interest is being shown in quality as well as quantity," said PROFESSOR SIR WILLIAM HOLFORD, MA, BArch, VPTPI, FRIBA, when he gave a paper entitled "Central Areas: Some Aspects of Size, Function and Design," on September 7.

"The economic outlook," he said, "is far from favourable, and it may be partly for the reason that it has been black for so long that we can no longer afford to sustain the all-out effort and the quantitative approach. In export lines, inventions, industrial production and controls, we are beginning to break away from the philosophy of the queue, and to discover new ways of doing things." He continued: Prime causes and objectives, and in particular the mainsprings of productivity, are being re-defined; and with this should go an examination of the economic and the psychological effects of living and working in villages and cities, new towns and old.

This questioning process is well under way. The Press and the professional societies have discussed during the past year a number of topics that bear directly on the kind of life that is led in different types of environment.

The critics and the correspondents have had plenty to say, which is in itself a healthy sign. And some of the subjects discussed, such as 'Houses versus Flats,' 'Building High,' 'Communities or Dormitories,' and 'Failure of the New Towns,' indicate the direction in which many thinking people are looking for improvement.

Public opinion in these matters seems to tend towards preventing what it has come to recognise as bad or inequitable, rather than growing enthusiastic about something of which it approves. This is quite natural. But the abandonment of development charges, the call for revision of the Rent Restriction Acts, and the realisation that even 300,000 houses a year are not enough, all point to the need for some constructive thinking on the credit side of the account.

Initiative and enterprise of this kind is already evident in the educational development plans, and in the design of school buildings. But here there is practically no risk of failure, for the fact is that everyone agrees on building for the younger generation. There may be arguments about types of school, but none on the need for them. And the general validity of Clarence Perry's thesis on the elementary school as the module of the residential neighbourhood is also widely accepted.

Enterprise also counts for a good deal in the successful creation of small factory and workshop areas—the industrial or "trading" estate in particular. Here the planning process is shared between public bodies concerned with land reclamation, the distribution of industry and the provision of services, on the one hand, and private concerns who risk their capital and energy—though not to the same extent as when they build entirely for themselves—on the other.

The buildings may be tailor made or bought off the peg; that is to say the design and financing of the factories may be done in advance of letting—as in the "nursery factories" at Team Valley or Crawley New Town—or they may be purpose-built to suit a particular firm. In either case there may be a successful marriage of individual enterprise with corporate or public planning, in which case the offspring represents a lively and interesting contribution to town development.

Schools and workshops are not, however, the stuff of which the core of a city is made. And it is here, at the centre, that enterprise, social function and design are most difficult to combine. It is particularly interesting to study this problem at the present time, for the reasons I have already mentioned. We have in this country long-established "central areas" in the historic villages and towns as well as in the metropolis. And at the same time we are contemplating the age-old, but always novel, synthetic process of creating real centres in the New Towns.

THE MISSING FACTOR

I am going to suggest that, as would-be town planners, we must rub our eyes and look at this problem afresh; it is one which the most efficient technocrat and the most able bureaucrat cannot solve alone—even on the rare occasions when they see eye to eye. There is a third and even more necessary ingredient and that is—Speculation. The true urban centre is a market place. It is a market place where ideas and entertainments are sold as well as merchandise. The selling process involves appeal, publicity, individuality, variety, and the risks attached to success as well as failure.

I believe this is true even of a non-capitalist society, although the risks in that case are taken by fewer people, less openly and with far more centralised insurance by the State.

But because we have turned the word "speculation" into a bogey, like "cost-plus contracts," or "ribbon development"; and because we have succeeded in the last hundred years in removing the speculative element from working-class housing—where it had no right to be—and from schools of the kind promoted by Dr. Squeers in *Nicholas Nickleby*, and from mass transportation (a costly achievement, this) and to some extent from the development of undeveloped land; because of all these good works and good intentions we are much less ready than formerly to summon speculation to our aid in forming or reforming the centres of our cities.

Yet it may be that the time has come to harness this steed to the coach, if we are to get it once more on the move.

SOME DISINTEGRATING FORCES

Before looking at the resources available for building up the cores of towns, it is just as well to glance at some of the influences that are tending to break them down.

Most important of these are traffic congestion and lack of parking space; next comes the high cost of central land, coupled with the increasing space demands of big stores on account of selling and display, welfare, storage and loading docks, and even administration.

In this country there are added deterrents, mainly financial, which restrict the use of public funds for public buildings, give preference to the house and factory and school, and discourage local authorities from acquiring consolidated sites and then developing them.

Everywhere television and wireless are having a reducing effect on cinemas and places of assembly. And many advocates of decentralisation are in favour of urban disintegration in principle.

In spite of the fact that no thinker on the subject of civic problems, from Aristotle to Howard, has even advocated the abolition of central areas as such, there are people today who argue that conditions are so changed and technical advance so rapid, that we shall be forced sooner or later to accept a scientifically dispersed network of small communities and easy communications in place of the huge urban tangles which we have now.

They point to the USA, where, in Los Angeles, for example, in 1929, about 33 per cent. of the total retail business was done in the central or "downtown" stores. By 1949 the percentage had dropped to 12.5 per cent., and it is still going down.

In this country we are still accustomed to divide the total retail business as to half in the central areas and half in the neighbourhood (although van deliveries and travelling shops are beginning seriously to affect this ratio). But here also, the argument runs, it would be better to reduce the number of shops than to make provision for too many. And anyone who studies the 1951 Census of Distribution and other Services, will be inclined to agree.

On the subject of the Central Area size and function, Professor Holford said:—

"Increased travel generally, bus services in particular, changes in spending power and the incentives to buy, improved welfare and working conditions in shops—all these things may increase the demand for central area space. At the same time the tendency towards consolidation and increased efficiency in retailing, the use of mobile shops, of telephone and mail ordering, the spread of television and (in this country especially) the lack of capital for individual investment in high-rented central areas, coupled with the consistently high cost of building, will almost certainly slow down, or reverse, this increased demand—except in special cases such as parts of the West End of London and some of the popular resort towns.

"But the developments, when they *do* take

place, after much estimating and calculation, have to be carried out quickly, comprehensively, attractively, and according to plan—if they are to be successful."

On the subject of design and referring in particular to eighteenth-century enterprise in Bath, Sir William posed the question, "What is the secret of Bath's enduring value?" His own feeling was that some, if not all, of the following conditions contributed to its success:—

"The operations were architecturally, financially and socially of appropriate size and scale. That is to say they could be visually comprehended, each as a unity in themselves, whether square, street or crescent; yet varying in shape and detail, and at the same time stamped by the style of the time and constructed in a sympathetic building material. They could also be financially comprehended, the layout of the second project being dependent on the success of the first, and none too large to be financed directly (or indirectly through building leases) by the promoters. They could also be socially comprehended, for the 'units' are of human scale, sociable and urbane, and laid out at a reasonably compact density.

"The designer sold his design to his clients directly. The speculative architect, combined artist and business man, differed from the speculative builder of the 1920's and '30's, in that he succeeded or failed by direct verdict of his public. The public therefore took an interest in what they were buying; they judged and criticized; and an age of taste was born.

"The speculative element in the designer's work, as well as in his patron's outlay, was not regarded as reprehensible; and civic authority more often than not supported private enterprise and created the conditions for good architecture. It is interesting to note that Thomas Baldwin, who designed the Guildhall at Bath at the age of 25, was city architect and surveyor, as well as being a speculative builder and planner of Bathwick.

"Finally, rein was given to imagination; and courage was not lacking among the officials, the patrons, the landowners and the architects themselves, to embark on relatively ambitious schemes. Those whose imagination stood the test of practice are now famous figures—John Wood, Robert Adam, John Nash, Decimus Burton, and many others. When by the mid-nineteenth century architects and town planners left speculation entirely to their clients and became professionally correct the great period of civic design was already over."

In summing up the various aspects of central area design which he had been discussing, Sir William said:—

"It seems to me that we must recognise the true functions of the core of a city, and its relationship to the size and character of the urban and peripheral area which it serves; that we should invite and stimulate a greater variety of enterprises to contribute to those functions; that we should divide the operations into manageable and visually recognizable projects; and that design should be one of the essential elements in the enterprise, not something to be squeezed in or left over when the prospectus is drawn up."

Economic Housing Layout

REFERRING to the importance to our national well-being of avoiding any waste of agricultural land, MR. J. L. WOMERSLEY, AMTPI, ARIBA, who read a paper on "Economic Housing Layout" on September 8, said the policy that it was decided to pursue must lie somewhere between that of the advocates of high flats for all city dwellers and the 12-to-the-acre adherents who said that only an area the size of Devon would be used up if every family had a house and garden. He continued:—

It is probably wrong to condemn families with young children to a life remote from the ground. It is probably equally wrong for professional men who may themselves desire to imitate their wealthy acquaintances living in detached houses at 4-to-the-acre, by living in garden city suburbia at 10-to-the-acre, to imagine that life of such a nature is the dream of the proletariat. Man in his more natural and less class-conscious state is gregarious and what the late Professor Reilly called "the friendliness of the slums" should be fostered carefully in our new housing schemes, for in it lies the essence of the community spirit which we planners talk about so glibly. These people like to talk to one another without dressing up and making special calls. The women like to sit on their doorsteps and chat on warm summer afternoons and their small children like to play together in a common garden outside their houses where they are safe from traffic. The terrace, the small house group, round the square or green are ideal for these fundamental requirements. To fence each family in and separate it from its neighbours is completely to misunderstand the problem by seeking to impose upper-class snob-idealism on the less inhibited members of the population. Thus in rejecting the semi-detached for the terrace, the lower density for the higher density, the less architectural for the more architectural we are at the same time providing more adequately for the social life of the people, saving land and saving expense in buildings, roads and services.

ORGANISATION FOR ECONOMY

At the outset it is important to establish the desirable set-up for the design of housing work as, without it, full value of the economies which will be referred to later cannot be achieved.

The first and fundamental factor is that no layout can be completely successful both aesthetically and economically, unless its designer is aware of, and sympathetic to, the plans and appearance of the individual dwellings. Unfortunately, there are still persons in positions of responsibility who think that housing layouts can be produced by putting down parallel roads at intervals of a couple of average plot depths and then getting some half-baked architectural draughtsman to fit in the houses. This is precisely what the speculative builder did between the wars (and despite large municipal and county planning staffs he is being allowed to start doing it all over again) and many local authorities have themselves never done it in any other way.

Whilst it would not perhaps be appropriate to claim that the architect/planner should do the whole thing, it is undoubtedly necessary to say that the final undertaking should have that sense of integration which usually results from its design having been subject to a unified control. Undoubtedly the job requires teamwork and the concert of many minds, but just as a team needs a captain so housing layout needs a master planner who will envisage the whole project and, taking into account the hills and valleys, the trees and hedges, the variety of dwelling types and public buildings, the roads, paths, drains and services, will create a neighbourhood of urban charm and safety which will provide a convenient and healthy background for the social and domestic life of its inhabitants. If a layout of this high order is to be achieved its planner will need to be able to think in three dimensions and to have an unerring sense of scale. In other words, he will need to be able to walk about, in imagination, the streets, squares, courts and greens of his plans so that the aesthetic and practical implications of the completed environment are thoroughly grasped at the design stage.

Whether the architect and planner are the same person or not it is becoming increasingly recognised that consideration of house plans and layout must go forward concurrently and that agreement on the main principles of the plan types and the form of layout must be reached at an early point in the design of the scheme.

The essential need so far as organisation is concerned is therefore that either the architect-planner should be in charge of the design of the whole project or, when the housing architect and layout planner are two separate persons, there should be a complete and harmonious partnership between them from the outset.

HOUSE GROUPING

Fortunately, certain national trends are at the present time assisting in the production of economy and variety in housing layout. The proportion of small families of one, two and three persons is, for example, rising appreciably with the result that layouts consisting entirely of the three-bedroom, five-person "semi" are no longer an economic proposition. At the same time, the flat dwelling is, in general, more suited to the small than to the large family. Thus, without entering into any controversy about the desirable height of flats, it is becoming generally accepted that layouts of two-storey houses can be varied by the introduction of two- and three-storey flats, of three-storey blocks of flats and maisonettes combined, and of four-storey maisonettes, in none of which is the highest floor for daily living purposes more than two flights of stairs from the ground. Buildings of these heights can be built economically of load-bearing brickwork and lifts are unnecessary.

In addition to the variation in appearance and skyline obtained by grouping buildings of different heights, a further most useful economy, which again brings with it improved architectural appearance, may be achieved by the introduction of two-storey corner flats, carefully planned in height and roof span to link together terraces of ordinary two-storey houses at right angles to each other. The use of such flats has many advantages—it distributes small dwellings (some of which will accommodate old people) amongst the larger family houses, it avoids the expenditure of money and materials in building link walls, it increases densities, and substantially reduces the distributed cost of roads, drains and services per dwelling. All these advantages are gained whilst being accompanied by a greatly improved architectural layout. At the same time, it is necessary to exercise considerable care in the use of corner flats on sloping sites, where special designs may be required. Over-enthusiasm for these small units may also result in too high a proportion of flats figuring in the overall scheme.

Frederick Gibberd has the happy faculty of expressing current architectural and planning trends in clear, precise English. The

swing away from the corridor-street in some of the most recent and best of post-war developments he describes as the change from the linear to the spatial layout. This is, of course, little more than a return to the urban planning principles of the eighteenth and early nineteenth centuries, as embodied in the squares of London, Bath and Edinburgh, adapted to twentieth-century social conditions. Nevertheless, the lineal, or corridor-street, type of layout has now had such a long uninterrupted run in housing schemes that the present indications of a change may be of considerable significance.

This more recent approach to housing layout rests on the basis of forming spaces between buildings rather than in ranging houses along road frontages, and it is submitted that it may well point the way to a vastly improved social and physical environment and to large economies in roadworks.

Intelligent comparison between the picturesqueness of our old villages and towns and the monotony of our inter-war suburbia shows all too clearly where the mistakes lie. According to our pre-war planning principles all these carefully preserved nooks and corners with their delightful sense of intimacy and charm should be cleared away as being unfit for habitation. Where is the 24-ft. carriageway, the 70-ft. space between buildings? They are not there because these gems of urban design were based on naturally evolving principles rather than on arbitrary mechanical restrictions. If we are to return to urbanity and economy in our housing layouts we must put an end to the traffic-worship of the first half of this century and relearn the art of creating a safe, happy and beautiful environment for living. We must bring our buildings closer together again and put traffic in its proper place.

In Somerford-grove, Hackney, Frederick Gibberd has taken advantage of the blitz by redesigning an area which gave precedence to the traffic of those living outside it in such a way as to give precedence to the inhabitants who dwell therein.

In another part of the country, the writer has watched with interest the social development of a post-war neighbourhood which included both group and ribbon houses. That the former type more naturally fostered neighbourliness was indicated to some extent by the fact that one of the groups, which was architecturally the most closely knit, became the first "street" group in the whole town to form a coronation committee with plans for teas on the greensward which comprised most of the space between the houses. This is perhaps a small, but nevertheless significant, pointer to the existence of social awareness in a completely new community. This relationship between architectural and social grouping has been further illustrated during the recent coronation festivities when it was primarily the little intimate streets and courts which became spontaneously flag-bedecked on a community basis. In transferring the people from such streets to an environment more suited to their physical well-being we must watch, more carefully than we have done hitherto, that we do not overlook their spiritual well-being. The welfare state promised health centres, community centres, churches and pubs in all our new post-war communities, but in how many cases have these remained names on a plan? In depriving the new estates of these aids to social well-being we must not further aggravate matters by making the normal social intercourse of the inhabitants more difficult. There would appear to be an urgent need for more research into this architectural-social relationship, as a result of which substantial all-round economies may well be achieved.

Rather surprisingly, in view of its desire for higher densities, the Ministry's handbook on Density of Residential Areas appears to accept the arbitrary convention that rows of two-storey houses should be kept at a minimum distance of 70 ft. apart. This seems quite out of keeping with the progressive outlook of the rest of the booklet and the authors are recommended to take a look at Hatfield, Wrexham and other competent contemporary schemes. If this attitude is maintained the charm and character which the handbook extols will be difficult to resurrect. Sixty feet has been tried with success and, according to circumstances, 55 ft. might well be allowed for limited distances and 50 ft. at salient points.

Trystan Edwards in his Chadwick Trust Essay of 1946, and on other occasions, puts forward strong arguments for a return to the dignified street architecture which scorns forecourts. He claims that a width of 30 ft. between fronts of two-storey houses suffices to secure a reasonable amount of sunlight in the rooms, but suggests that the living-room windows might be set back some 2 ft. for the sake of privacy. This essay with its diagrams and perspectives could with advantage be studied by all planners, as it puts forward a most interesting case for very high density housing as distinct from high density flats. Hard economics, if not public demand, may yet prove Mr. Edwards to be some 25 years in front of the rest of us.

ROADS AND SERVICES

Both Unwin and Parker were at pains to inform their fellow-planners that "the acid test of the financial efficiency of plans for housing schemes is the length of road per house." They went even further in their endeavour to put housing economy in proper perspective by drawing attention to the fact that cottages were frequently reduced in size or otherwise cut down to save comparatively small sums when more careful consideration of the road schemes would have saved infinitely more. They were, of course, referring to private enterprise developments where sound economies were essential to the continuation of the project. There were no subsidies and loans to lull these men into the false sense of affluence which in recent years has prevailed in local authority housing.

Despite these time-worn words of wisdom, many housing architects to-day are astonished at the small attention which has been given to possible reductions in road costs in comparison with the energy and ingenuity displayed in knocking even shillings off the cost of the house itself. It is surely time that the length and specifications of housing roads came in for more concentrated attention. An enforced reduction in road length per dwelling would have a far more beneficial effect on the layout than reduction in floor space has on the house itself.

If we accept the principle of spatial layout, the importance of the road in housing layout will suffer a severe, but overdue, eclipse. Vast areas of concrete and tarmac which have been provided mainly to allow traffic to get about easily and speedily will be turned into paved and grassed courts for the delight of the residents, whose life will be correspondingly less noisy, less dangerous, less costly and more beautiful.

It will still be necessary, of course, to have certain principal roads connecting the various parts of the estate to the major periphery roads and forming the basis of the layout, but all other roads will serve merely to give access to the various building groups which thus become predominant. To deter traffic from using these access roads unnecessarily they can be planned in the form of culs-de-sac linked together by access paths for the convenience of the pedestrian. Thus virtually traffic-free precincts or "super-blocks" are created within the main road system.

It is still open to the designer to lay out the super-block on the more conventional method of front access roads with private gardens at the rear or on the Radburn system where the roads serve the rear of the buildings and an independent traffic-free footpath system is created linking the fronts of the houses in a common parkway. Whilst the latter system may add somewhat to the amount of footpaths, in practice it has been found that the reduction in carriageway has been very considerable. Using either type of development, careful planning on the basis of a grouped layout of this kind can result in savings in the cost of roadworks per dwelling as high as 20 per cent. compared with the more conventional corridor-street pattern. So is the cost of housing lowered and a better job made of it.

With regard to services it seems strange, in this scientific and mechanical age, that in many areas three sets of people come along at different times and dig their separate trenches, each one creating havoc for the building contractor who may unavoidably have arrived first. Whilst the electricity cable apparently presents a danger if laid with other services, certain gas and water boards combine their services in one trench. If this can be done in one part of the country it would appear to be possible in others, and strong efforts should be made to this end. Here, again, the closer grouping of dwellings advocated on architectural and social grounds assists economy by reducing the lengths of both service mains and branches.

Planning in Australia

THE inadequacy of our existing technique for the implementation of planning was emphasised by PROFESSOR DENIS WINSTON, MA, BArch, FRIBA, MTPI, FILA, in his paper on "Planning in Australia," which was presented on September 9. On this aspect of his subject Professor Winston said:—I wish I could tell you of some new planning technique or some splendid piece of new city building that would be worth while coming all the way to Australia to see: but in fact, as you know, from the point of view of planning theory Britain is to-day ahead of the rest of the world while, as regards the practical application of planning principles, Germany—the pioneer of research in the last century—and her Scandinavian, Dutch and Swiss neighbours, lead the field. No, I cannot hope to offer you any planning lessons from Australia except the ones you all know too well already, such as the extreme difficulty of doing things well and quickly by means of British administrative machinery, and particularly planning machinery. But this is a matter of the greatest importance, for just as our parliamentary system of government is on trial generally in the world to-day, so is this particular aspect of that system, that is to say, whether it is possible through the machinery of local government representatives and their committees to achieve

reasonable efficiency, convenience and economy in our everyday life.

In Australia we find ourselves uncomfortably veering between two extremes. We are confronted by the typical Anglo-Saxon squalor of a rapidly developing community —fringe development of the most wasteful and horrid sort, frightful destruction of natural beauty and natural resources, with public authorities just as much at fault in these matters as private enterprise, and with all the usual transport and service difficulties that accompany this kind of disorderly development—in the face of all this people say, "For heaven's sake let us put a stop to it at all costs; even by 'planning' if planning will do it."

INDECISION AND WAVERING

And so they get planning, detailed statutory planning; but the planning and the planners too often prove inadequate for the task. (And I am not now thinking only, or even primarily, of Australia.) People are ready for drastic decisions, but they get wavering and indecision; they ask for clear and understandable schemes of which the details are readily available to show them where and how they are personally affected, and they find the maps and documents difficult to come by and harder still to understand; they ask for prompt and clear replies, one way or another, when they wish to develop, and for a uniform and consistent policy as between one man and another and between a public authority and a private developer; and they ask not to be put to undue trouble and expense in all this, and to be paid fair compensation promptly, if the scheme really affects them injuriously. That I believe is a fair summary of the ordinary person's attitude to planning to-day.

But these reasonable demands are rarely met: instead, the plans never seem dependably finalized, there is always the feeling that a new Officer or a new Council or a new Minister may change the scheme, that the new £1 million highway many not in fact go through just there—if at all. And there is long delay and great expense involved in consulting solicitors, valuers and architects and preparing plans which may after all prove abortive; and finally, if eventually you find that the land in question is reserved for another purpose, or it is to be compulsorily acquired for a public body to build on it the very things for which you yourself were refused permission, then you may still have to wait months or even years for your compensation, and you are never sure whether the latter will really represent the true value of your loss. And so a great change of sentiment occurs and in despair people say, "Well, if that's 'planning,' give us back the original chaos and we'll cut our own clearing in the jungle, wall in our own little private oasis of decency, and let the rest go hang."

NEED FOR FURTHER RESEARCH

The moral of all this is surely that our planning theories have to a certain extent outrun our practical ability to apply them; that now is a time for digestion and consolidation and for a new emphasis on ways and means, on what is legally possible or desirable, on how the necessarily complex machinery of consultation can be made speedy as well as efficient; a deeper appreciation of the time factor in planning and of the relationship between planning developments and the other necessary financial commitments of the community, and particularly a better technique of public relations in all its aspects: these seem to me to be some of the things with which planners should be particularly concerning themselves at the present time in Australia; and I mention them in the hope of learning how you are tackling the similar difficulties that I know have arisen here. One approach, I feel sure, should be an attempt to simplify planning schemes so that nothing but really essential matters of practical importance to the community are covered by them.

I have an idea that some of us may, as planners, have been attempting an over-all elevation of the social and cultural life of the community which the combined forces of church and school and university will find it hard enough to bring about. We should therefore be by no means cast down if all that we have imagined has not yet been achieved, when so much real progress has in fact been made. Perhaps the most significant fact that I can bring you from the farthest end of the earth is that every basic principle that the pioneers of our art and science of town and country planning have worked out and formulated during this last half century and more holds true, and is just as evidently true, in Sydney or Melbourne, Adelaide, Brisbane or Perth, as in Manchester, Glasgow or Bristol. We can therefore go forward, sure in the rightness of our course, and if we trouble to look back even a few short years, comforted by the progress that we have made.

Other Papers

OTHER PAPERS presented at the Summer School are "How Far can a Development Plan Assist Rural Development?" by Mr. R. L. Stirling, MTPI, ARICS, AMICE, given on September 10; and "Population Movements into the Outer Suburbs of Large Cities —Measurement and Prediction," by Mr. Colin Clark, MA, to be given to-day.

ANGLESEY HOUSING SURVEY

"Startling Conditions" Reported

IN A reference to a recent rural housing survey, DR. WILLIAM MCKENDRICK, medical officer of health, reports to Aled Rural District Council, Anglesey, that the findings were startling in that more than half the houses inspected needed some degree of repair or reconstruction.

The Rent Restriction Acts—excellent in intention—had made it almost impossible for an owner to keep property in good repair. "We must face the fact that a good house with reasonable facilities cannot be let at a few shillings a week which our grandfathers were accustomed to pay," he states.

Costs, money values and wages were vastly different from those ranging in those distant days. Rents of council houses were related to current costs, and it seemed proper that other houses should be so related.

The position of the ordinary owner was hopelessly uneconomic, he declared. Somehow they must strike a balance between the economic return of the good owner, and a reasonable rent for the tenant because the country could not afford to lose those houses.

In Aled alone 1,095 houses needed work done on them, and in many cases the owners had written them off as undesirable and would gladly give them away. New houses could not replace them, and they could all be made fit and have a useful life for another 30 years.

TOWN PLANNING DECISIONS

Extension of Sand Workings near Limpsfield: Minister Allows Appeal

THE appeal of the Titsey Estate Co., against the refusal of the Godstone RDC, acting on behalf of the Surrey County Council, to permit the winning and working of sand from a site adjoining Moorhouse Sand Pits was the subject of a public inquiry at Oxted in February last. The appeal site comprises 48 acres of agricultural land lying mid-way between Limpsfield and Westerham, immediately to the west of appellants' existing Moorhouse pits. It was stated at the inquiry, however, that it was proposed to work only 31 of the 48 acres as borings had proved that the sand content of the western end of the site was not satisfactory. Buildings belonging to Broomlands Farm are situated a short distance to the north-east of the site and fields belonging to the farm lie to the north and west.

Permission was refused by the Council on the grounds that further working would injure the amenities of the area and encroach on the Green Belt, that adequate reserves of sand still remained in the appellants' existing pits, and that the proposal would interfere with the economic running of a farm.

High-Quality Sand

In the course of a lengthy decision, the Minister says it was stated at the inquiry, on behalf of the appellants, that they were important producers of sand in the south-eastern area, and that the Moorhouse Pits produced a high-quality sand used in plastering, tile making and some building operations. This sand was an admirable building sand by reason of its uniformity and texture, and was widely specified by architects for first-class work; it was in great demand, and at the moment the Moorhouse Pits produced 27 per cent. of the total output in the south of England. If production ceased, there would be an immediate shortage which could be relieved only by transport at great expense from more distant sources. Borings made on the appeal site proved the presence of this sand down to depths of from 30 feet to 50 feet. Reserves were about 1,250,000 cubic yards, sufficient for 10 years' working at the present rate of production. In two years' time, or earlier, the limit of economic working at the existing pits at Moorhouse would be reached, for, by that time, the iron-sand rock stratum would have been reached, and the sand underlying that stratum was of inferior quality.

The appellants, continues the Minister, proposed to strip the overburden separately and to preserve it, and to restore the site to a condition suitable for agriculture. A landscaping scheme had been prepared to deal with any damage to the visual amenities, which included the planting of trees along the edges of the pits so that the excavations would be screened from the south, east and west.

The local planning authority opposed the appeal on general grounds. They contended that the appellants had not excavated their existing pits to the fullest possible extent; that no serious efforts had been made to prove the sand content below the floor of the existing pits and that, in any event, the authority were not satisfied that sand of comparable quality could not be obtained

elsewhere. The appellants' method of working their existing pits, said the planning authority, was haphazard and unsightly; no attempt had been made to restore the land in accordance with planning conditions; land had been worked at scattered points instead of in an orderly and progressive manner, and the excavations had not been levelled off or resoiled.

The Minister says he notes that the excavation of the appeal site would interfere to some extent with agriculture and might reduce the economic efficiency of Broomlands Farm, but he was of the opinion that the loss of this land would not be sufficiently serious to justify refusal of permission. The real conflict was between the needs of production and amenity. The Moorhouse area was of considerable scenic beauty, and the Minister appreciated that excavations would cause some inconvenience to near-by residents and would produce scars which could not be concealed from all viewpoints during the period of working. On the other hand, he took the view that the production from the Moorhouse Pits was of special importance by reason of the type of sand and the uses to which it was put by the building and allied trades, and he had decided that all reasonable steps must be taken to maintain production. He was satisfied that reserves of sand in the appellants' existing pits were not sufficient for this purpose and he therefore proposed to allow the appeal, subject to conditions designed to avoid undue injury to the amenities of the area and ensure the effective restoration of the site.

Proposed Advertisement on Flank Wall of Streatham Site: Appeal Dismissed

THE MINISTER OF HOUSING AND LOCAL GOVERNMENT has now considered the appeal of James Davey Sites, Limited, against the refusal of the Wandsworth Borough Council to allow a 25 ft. square flank wall in Streatham Hill, overlooking Streatham Hill Station and part of Leigham Court-road, to be used as an advertisement site.

In giving his decision, the Minister says he observes that the proposed advertisement would be displayed at the third- and fourth-floor levels of the flank wall of a building used as a shop with residential accommodation over. He notes that the appeal site is at a busy cross-roads in a mainly commercial area of neat and orderly appearance and faces a block of modern flats above shops.

The Minister considers that the proposed advertisement would detract from the appearance of the building on which it would be displayed and would be prejudicial to amenity. The Minister has accordingly decided to dismiss the appeal.

Self-Build Housing Association's Appeal Dismissed

THE APPEAL made by the Morden Self-Build Housing Association against the refusal of the Malden and Coombe UDC to allow them to build 40 semi-detached houses at Coombe, Surrey, on a five-acre site north of Hoppingwood Farm, has been dismissed by the Minister of Housing and Local Government.

At a public inquiry, held in June last, the Council's action was supported by the Coombe Residents' Association and the owners of several houses in the vicinity of the appeal site. It was stated on behalf of the Council that their objection to the proposed development was based mainly on the ground that the Association was seeking to build at a density of eight to the acre upon land adjoining an area which had been developed at a density of one to the acre and where it was intended that spacious properties should continue to be built. Reference was also made to the wooded nature of the site and to the high cost which would be involved in purchasing the land, clearing the site and providing roads and sewers.

In giving his decision, the Minister states that the land has a general fall, an irregular surface and is densely covered with shrubbery, including masses of rhododendrons and many large and handsome trees, fairly thickly spaced in random fashion.

It is clear, continues the Minister, that there are a number of factors which would make it difficult and very expensive to develop this land.

The appellants admitted that these factors were discouraging, but thought that the difficulties could be overcome by hard and continuous work.

The Minister is not, however, satisfied that the development of the land on the lines contemplated by the appellants could be carried out without serious damage to the amenities of this area, particularly since it would involve extensive clearing and the felling of many trees.

He has given full weight to all the points advanced by the appellants in support of their proposal, but has come to the conclusion that on balance he must support the Council's decision.

Minister Allows Chelmsford Residential Premises to be Used as Offices

THE NATIONAL EMPLOYERS' MUTUAL GENERAL INSURANCE ASSOCIATION, LIMITED, has successfully appealed to the Minister of Housing and Local Government against the refusal of the Chelmsford Borough Council, acting on behalf of the Essex County Council, to consent to the conversion to, and use as, offices of the residential premises known as Mansard House, London-road, Chelmsford.

The Minister states that the appeal site, which is situated at the east corner of the junction of New London-road and Writtle-street, is within an area scheduled for commercial use in the Development Plan which is now before the Minister.

On behalf of the appellants and the owner it was stated at the inquiry that Mansard House, which was converted into two self-contained residential flats in 1935, was damaged by enemy action in 1943 and remained empty until it was requisitioned by the Council in 1945. After repeated applications by the owner, the house was released in September, 1952, when it was put up for sale. While reasonable offers had been received for a commercial use of the premises, no such offers had been made for residential purposes, and it was therefore contended that owing to the commercial surroundings the position was no longer attractive for private residential purposes.

The Minister has come to the conclusion that the loss of this particular house, which is admitted to be in a commercial area, would not seriously prejudice the housing position in Chelmsford. He has, accordingly, decided to allow the appeal and permit the conversion to, and use as, offices of Mansard House. Details of the alterations proposed shall be as may be agreed with the local planning authority or, in default of agreement, as shall be determined by the Minister.

FACTORY EXTENSION.—These wooden bow string trusses, which are among the largest in the country, each having a clear span of 100 ft., are being incorporated in a new building extension at Stowmarket, Suffolk, for Stramit Boards, Ltd. The bow and tie beams are both of laminated construction. The bow consists of two 4 in. by 10 in. members laminated horizontally, and the tie beam is two 4 in. by 7 in. members laminated vertically. The glue used was urea formaldehyde. The trusses were made by Wm. Kay, of Bolton. Owing to their size some transport difficulties were encountered in moving the trusses from Lancashire to Suffolk. The journey took a week in all.

Grimsby's Housing

Concern is being expressed by members of the housing committee at Grimsby about the length of time which some second-hand houses in the town are remaining unoccupied. The housing manager, Mr. W. J. Anderson, estimates that in various parts of Grimsby, which has a population of 91,000, there are 350 houses for sale, equal to a year's allocation. The reason is thought to be the preference of people for building their own homes.

ELECTRICIANS' STRIKE

"Big Extension" Planned

AT least 4,500 electricians were now on strike in the electrical contracting industry, MR. W. C. STEVENS, general secretary of the Electrical Trades Union, said on Monday, at Douglas, Isle of Man, where he has been attending the Trades Union Congress this week.

"We are going ahead with our plans to bring them out on all large and important sites," he added. There would be further big extensions of the strikes next week-end.

The union is in dispute with the National Federated Electrical Association over a claim for a substantial increase in wages for about 40,000 members in the electrical contracting industry.

Mr. Stevens announced that the union had reached an agreement under which maintenance electricians employed by a building firm and two public works contractors at the atomic research station at Capenhurst, Cheshire, would return to work. They were being given an increase in wages of 3d. an hour. The three firms concerned were not affiliated to the NFEA.

The union has now extended the strikes in such a way as to affect all the firms directly represented on the employers' side of the national joint council for the electrical contracting industry. This policy has stopped certain electrical work at three airfields in Northern Ireland, a chemical works at Castlethorpe, a gas works at Derby and an engineering factory at Rugby.

Mr. Stevens said that all the electricians employed in the firm of the chairman of the national joint council, which is in business at Liverpool, had stopped work. Electricians employed by members of the employers' side of the council in Maidstone and Newcastle upon Tyne had also gone on strike. Lists, he said, were now being drawn up for extensions of the strike in England. If no offer came from the Scottish Employers' Association by the next day about 800 men might be called out on contracts there. The maximum number of men who would be told to strike might be about 20,000, but it would take some weeks to reach this total.

The strikers, he added, were being paid £3 a week, plus 15s. for a wife and 7s. 6d. for each child.

Employers' Denial

MR. PENWILL, secretary and director of the National Federated Electrical Association, whose executive met in London on Monday, referring to Mr. Stevens' announcement that three firms at Capenhurst had agreed to pay 3d. an hour wage increase, said: "The building firm in question is a member of the Association. It has been pressed by the ETU to agree to an increase of 3d. an hour, but has refused and is not paying it."

HOUSING PROGRESS REPORT

Figures for July

THE HOUSING SUMMARY presented to Parliament as a White Paper* jointly by the Minister of Housing and Local Government and the Secretary of State for Scotland, shows that the number of permanent houses completed in Great Britain during July was 27,206 compared with 19,985 in July, 1952.

In the first seven months of 1953, 172,510 permanent houses were completed compared with 130,949 in the same period of 1952.

*Cmd. 8935 Housing Summary, July 31, 1953 HM Stationery Office, price 2d.

SITE PREFABRICATION

Housing for Coal Workers

AN opening ceremony of the first 12 houses for miners to be erected on the Park-lane site, Biddulph, Staffs, was held on August 14. These houses are the first to be completed by Richard Costain, Ltd., for the Coal Industry Housing Association in the West Midlands Division of the National Coal Board. The architects are Venables and Williams, L/ARIBA. The scheme envisages the erection of some 1,000 houses on three sites near Stoke-on-Trent, and the method of construction employed is the Schindler-Goehner System.

With this system a temporary factory is set up on the site in which are produced the panels forming the inner skin of the external wall, together with the partition walls and party wall. The panels are cast in gypsum plaster reinforced with fibre, and incorporate windows and door frames, conduit and ventilators, as well as fibrous plaster column and beam casings.

They are erected on a prepared concrete foundation slab, and the column and beam casings are reinforced and filled with concrete. A mobile crane is employed which can also be used to place into position floor panels, stack sections built on the ground, and prefabricated roofs. The external cladding to the panels is then carried out in traditional materials and bonded to the concrete frame with ties at suitable intervals. The interior panels are made in room sizes so that jointing occurs at angles only, and varying size panels can be produced by simple adjustment of the factory jigs.

The system has already been used on the Continent for multi-storey flats, barrack blocks and similar structures, and Richard Costain, Ltd., are extending its use here.

UNLICENSED WORK SUMMONSES

Surgeon and Builder Charged

A SURGEON and a builder appeared on remand at Manchester on September 7 on summonses issued by the Ministry of Works alleging breaches of the building regulations. The surgeon, Professor A. M. Boyd, of Plattlane, Rusholme, Manchester, was accused of directing unlicensed work at his home at a cost of more than £5,000; and the builder, James Kilday, of Clovelly-road, Chorlton-cum-Hardy, Manchester, was summoned for undertaking the unlicensed work.

Mr. Granville Slack, prosecuting, said that the summonses were brought under the Buildings and Supplies Act of 1945 under which there was what was known as "a free limit" of building work of £100 in any one year, rising to £500 this year. The work at Professor Boyd's house was carried out in 1951-52, and most of it was believed to have been done by Kilday.

Mr. Slack said that Professor Boyd had given a considerable amount of information to Ministry of Works officials during the inquiries. When interviewed by Mr. S. Richmond, a Ministry official, Professor Boyd said that Kilday gave him a clear impression that he would take care of any licence work that might be necessary.

Kilday, when interviewed, said he clearly understood that Professor Boyd had got a building licence and could secure any additional licences required.

Boyd and Kilday were both committed for trial to the Manchester City Quarter Sessions. They were allowed bail, and both reserved their defence

OVERCROWDED COLLEGES

Technical Education Hampered

THE Select Committee on Estimates, in a report on technical education published on August 26, draw attention to the serious shortage of satisfactory accommodation and state that "while these conditions exist it will not be possible to ensure a full return for the money spent on technical education and that the national effort is bound to be retarded."

At Birmingham, the report states, "the overcrowded condition of the College of Technology cannot be over-emphasised." Improvisation has been carried to the limit and all practicable space, including corridors and the space under a platform in a lecture theatre, has been allocated to teaching. At Sheffield there is "desperate need of accommodation," in spite of the use of previously disused schools and temporary huts.

In Scotland the difficulties prevail "to a more serious and marked extent." Nissen huts, office premises, disused factories, old churches and schools, and even a slaughter-house have been brought into service, but even so "pressure on accommodation is evident at all levels, both in rural and industrial areas." The report says it is impossible to measure the financial cost or the loss in technical efficiency caused by these improvisations.

Contrast with Scotland

The committee remark particularly upon the contrast between England and Wales on the one hand and Scotland on the other.

In England and Wales, they state, the local education authorities appear to be pressing for a greater allotment of money and permission to spend it; but the central Government, because of severe restrictions imposed on them by present economic conditions, often have to refuse assent. "In Scotland the reverse seems to be the case; the central Government are willing to grant the money but the demand for building permission is not forthcoming from the local education authorities."

Building System Criticised

The committee criticise adversely the system of building technical colleges in instalments, "a process which is admitted by all to be expensive in money, labour, and materials." At Birmingham the additional expense was stated to be from £150,000 to £250,000, while 500,000 bricks were used in "sealing off the first completed instalment." The committee ask the Ministry of Education to re-examine the method and to consider the suggestion of allocating to local authorities money for building technical colleges on a five-year basis.

Other recommendations are that the Ministry should ask the regional advisory councils for technical education to ascertain the extent of deficiencies and the industries affected to discover whether more money should be made available, and that the Scottish Education Department should consider the earmarking of part of their grant to local education authorities for building new premises for technical education.

Employment Situation

Employment in the building and contracting industries declined by 8,000 during the month of July to a figure of 1,440,000.

NEWS IN BRIEF

An Appointment

Mr. R. Padmore, ARIBA, of West Ham, has been appointed Deputy Borough Architect, Swansea County Borough Council.

Birmingham's Overspill Population

Tutbury RDC, Staffs, has been asked to help Birmingham's overspill population by building 10 houses a year for five years.

Eye Protection

A campaign against eye injuries in industry will be held during National Industrial Eye Protection Week, September 21 to 26. The drive has been organised by the Royal Society for the Prevention of Accidents; information and advice will be made available in the form of posters, leaflets and demonstrations.

Building Crafts School

This year the Building Crafts Training School in Great Titchfield-street, London, W1, celebrates its 60th anniversary. It was in 1893 that the Carpenters' Company opened its Trades Training School on the same premises under the direction of the late Professor Banister Fletcher. Details of the day and evening courses available during the 1953-54 session are given in a new prospectus which was recently issued.

Technical Education

Courses in building, plumbing and sanitary engineering are to be offered at Birmingham's new technical college at Brooklyn Farm, Aldridge-road, which was officially opened at the beginning of September for the 1953-54 session. The college is one of 21 county colleges which Birmingham intends to build under its long-term programme for adult education. Each is expected to cost about £250,000 to build. The Brooklyn Farm college has a fully equipped theatre capable of seating 1,000 people.

Ceiling at Burton Agnes Hall

We are asked to point out that the work of restoration to the honeysuckle ceiling at Burton Agnes Hall, near Bridlington, illustrated in our issue of August 14, was carried out by Taylor and Salter, Ltd., plasterers, of Woodhouse-lane, Leeds, under the personal supervision of Mr. W. Salter, as was the restoration work to the ceilings at Nostel Priory and Temple Newsam, also referred to in our caption. The work at Burton Agnes Hall was carried out on behalf of Mr. M. W. Boynton; Mr. F. F. Johnson, ARIBA, was the architect for restoration.

Derequisitioning in July

Two Blackpool hotels, representing an area of approximately 13,000 sq. ft., are among the 32 properties or part properties derequisitioned by the Ministry of Works during July and handed back to owners or previous occupiers. The total accommodation area thus released is approximately 154,000 sq. ft., and the average rate of derequisitioning of property in Government occupation is maintained at rather more than one a day. Largest single release was 16,854 sq. ft., part of ground and first floor of a factory and warehouse in Grosvenor-road, London. Six office premises or part premises are included in the releases, three houses (about 9,500 sq. ft.) in Newport, Wales, and three large houses (each 3,000 sq. ft. or over) in Scotland. Releases in London, totalling approximately 79,000 sq. ft., included seven large houses.

Bournemouth Transport Depot

Messrs. James Drewitt and Sons, Ltd., of 127, Seabourne-road, Bournemouth, who were general contractors for the Bournemouth Transport Depot illustrated in our last issue, inform us that they carried out the extensive prestressed concrete work and granite roofing work with their own engineers and staff, with the exception of the work on the garage building, which was carried out by the Vibrated Concrete Construction Co., Ltd., working as subcontractors to the main contractors.

London Appointment

Mr. W. R. Gillespie, who leaves Birmingham for London this month to become organising secretary of the Association of Land and Property Owners, has been, for the past five and a half years, Midland Regional organising secretary for the National Federation of Master Painters and Decorators of England and Wales. Mr. K. W. Mansfield, aged 41, of Derby, becomes the Federation's new organising secretary.

Lighting Exhibition

An exhibition is being held by Heal and Son, in the Mansard Gallery, at their premises in 196, Tottenham Court-road, W1, in conjunction with the British Thomson-Houston Co., Ltd. Entitled "Lighting to Measure," it consists of a series of furnished rooms with lighting schemes arranged to show fittings correctly designed and positioned for various activities. The exhibition is due to close on October 24.

Flood-Warning System

The main features of the flood-warning system, which is to be introduced in coastal areas as from September 15, are referred to in Circular No. 52/53 which has been issued by the Ministry of Housing and Local Government.

Station Improvements

Sunderland Station is being modernised by British Railways North-Eastern Region at a cost of £50,000. Work already completed includes the remodelling of the concourse and buildings at the south end, and the removal of the overall roof and erection of umbrella roofing to the platforms of light welded construction and glazed cladding. Remodelling of the concourse and buildings at the north end is now being developed. The architectural work was carried out to the designs of the Regional Architect, Mr. A. N. Thorpe, FRIBA, the whole of the work being under the direction of Mr. A. Dean, MSc, MICE, civil engineer, North Eastern Region.

Modern Arks

Head of a Dudley gymnasium equipment manufacturing firm, Mr. Ivor Bliss wants to use his knowledge of boat-building (in which trade he began his career) to help in furthering the housing programme. His idea is based on the methods used in constructing a clench-built boat, with ⅞ in. by 4½ in. oak boards overlapping and fixed together with copper nails which are riveted over a washer to make a strong seam, wind proof and water tight. Mr. Bliss suggests that sections measuring about 4 ft. by 8 ft. could be made, to be bolted together to construct a timber building of any size. "The roof would be similarly constructed and, with a foundation to raise the building some 18 inches above the ground, we should have a house to withstand any weather for at least 80 years."

Telephone Number

The telephone number of the Iron and Steel Board has been changed to Trafalgar 8833. Access to the Board's Offices at Norfolk House will temporarily be by the entrance at 30, Charles II-street.

German Building Centre

Architects, manufacturers and other building interests in Western Germany are planning to establish in Cologne a building centre similar to that in Britain, writes a correspondent. A member of the Federal Ministry for Housing, Dr. Dissmann, will supervise the organisation of the centre until a special administrative staff has been appointed. The main object of the centre will be the introduction of modern methods of building construction.

Quantity Surveying

Excellent opportunities for advancement and the attainment of positions of responsibility with high remuneration are offered by the quantity surveying profession, according to "Purpose and Prospects in Quantity Surveying" by J. Lester, FIQS. Copies of this booklet, which indicates the various means of entry to the profession, can be obtained gratis on application to the General Secretary of the Institute of Quantity Surveyors, 98, Gloucester-place, W1.

Bonus Scheme

A scheme under which every site job has a set time in which to be completed has been introduced by John McLean and Sons, Ltd., Wolverhampton, for the workmen on Dudley's new housing estate at Sledmore. The scheme began five months ago, when a time and motion study expert assessed a specific time for the completion of different jobs. For two carpenters fixing the ground floor joists of four houses he set the time for completion as 28 hours. The men speeded up their work, finished the job in 19½ hours, and shared the bonus of 8½ hours pay. Men in various trades, except the bricklayers, have joined voluntarily in the scheme, and the firm hopes to build the 236 houses on the site within 20 months. The time taken to build one house has been reduced to less than five months, the normal time taken being eight months.

US ECONOMIC AID

Building Advisory Service

THE BUILDING INDUSTRY is to be given a share of the money allocated to this country under the United States' Mutual Security Act. The largest item is £20,000, which has been allocated to the Ministry of Works for the development of a building advisory service. Preliminary discussions have taken place on the form which the advisory service should take, but the project has not yet been fully worked out. Particular attention will be paid to the helping of firms, especially the smaller firms, to reorganise in order to improve their production techniques and increase their productivity.

There is a general allocation to assist in the making of films on industrial productivity, and the building industry is named as one of the subjects. From the allocation for publications the Ministry of Works is to have funds for the preparation of technical publications giving the results of scientific research and new development in building. No grant has been made to the building industry for educational purposes.

TRADE NEWS

Stock List

A September issue of their Stock List has been produced by Higgs Motors, Ltd., Witton, Birmingham, 6. It contains details of their electric motors, generators and control gear.

Removing Grime

To remove the thick grime covering frescoes, walls and ceilings in the Chapel of Worcester College, a contract for cleaning and restoration was given to Heelas, Ltd., of Reading. The contractors used "Chemico" smooth paste cleanser, which has a glycerine base and proved suitable for removing the grime without harming the delicate plasterwork. The cleaning operations brought to light two hitherto unrecorded paintings of Adam and Eve. "Chemico" is made by the County Chemical Co., Ltd., Shirley, Birmingham.

Solid Fuel Appliances

The heating by direct radiation of a room up to 1,500 cu. ft. is understood to be provided by the Eagle Boiler Flue set No. 4, complete with 16-in. radiation inset fire. Up to 40 sq. ft. of radiating surfaces (radiators and unlagged pipes) may be heated in addition to the normal domestic hot water supply, or the boiler may be used to heat up to 75 sq. ft. of radiating surfaces only. The manufacturers, Radiation, Ltd., Radiation House, Stratford-place, W1, have published a leaflet showing the specification and performance of this boiler unit, and the hot water installation is explained in diagrammatic form. Their range of solid fuel appliances also includes the "Nuray" open fire stove of 8,500 BThU/hr. output, and the "Sutton" all fuel fire.

Prestressed Flooring

Pierhead, Ltd., Speke Boulevard, Liverpool, 19, have published a brochure illustrating and describing their range of prestressed concrete products. Of particular interest is the Pierhead X7-in Freyssinet prestressed floor and roof which consists of pretensioned concrete joists used in conjunction with light-weight hollow infiller blocks. The manufacturers claim that prestressing, being economical for long spans, enables these floors and roofs to carry up to spans of 30 ft. with a depth of only 7 in., at keenly competitive prices. To the advantages derived from the prestressing technique are added those of the specially shaped lightweight and highly fire-resistant hollow infiller blocks which are laid between the prestressed joists from above to form the simple Pierhead floor construction.

Heat Meters

A method of measuring heat and hot water by which the individual user can be charged is provided by the products of Clorius Heat Meters (England), Ltd., 5, Vandon-street, Buckingham Gate, SW1. The heat meters are suitable for all types of radiators, and consist of moulded alloy heat conductors which contact the radiator intimately, so that the maximum heat is transmitted to them. The hot-water meters comprise venturi tees built into the piping system, with meter houses containing a heat accumulator and measuring glass, partly filled with fluid, which works on a distillation principle. As well as supplying the meters, the manufacturers also undertake the reading of them, seasonally or quarterly.

Price Reduction

A reduction in the prices of their "Hiduminium" rainwater goods has been announced by High Duty Alloys, Ltd., Slough, Bucks, and in addition more favourable terms are available to stockists. Revised price lists can be obtained from the company.

Conference Exhibition

Resilient moulded connector units and an industrial wiring system are among the items to be exhibited by British Insulated Callender's Cables, Ltd., 21, Bloomsbury-street, WC1, at the "Minibition" organised in connection with the annual conference of the Purchasing Officers' Association. This is to take place at Brighton from September 24 to 26.

New Company

Owing to the increase in sales of contractors' plant the directors of Buckton, Ltd., 63, Stockport-road, Ashton-under-Lyne, have decided to form a new company handling exclusively this side of the firm's activities. The new company, under the name of Eric Hewitt & Co., Ltd., and operating for the time being from the same address as Buckton, Ltd., will handle all inquiries for Dixon-Hawkesworth products, the Wild-Fawcett tower crane, the Warry hoist and other types of contractors' plant including spares and accessories.

Metal Windows

A 1953 catalogue has been published by the Crittall Manufacturing Co., Ltd., Braintree, Essex, containing a description of their metal windows and doors. An excellent selection of illustrations shows major buildings in which these items have been installed, with the different purposes to which they can be adapted. The process of production is explained right from the moment the raw material arrives at the Darlington rolling mills to the delivery of the finished article. Of interest to the designer are the many full-size and half-size details provided, as well as specifications. Well bound and printed upon art paper, this catalogue makes a useful work of reference. A limited number of copies are available from the manufacturers.

London County Council

HAMMERSMITH SCHOOL of BUILDING & ARTS & CRAFTS

LIME GROVE · SHEPHERD'S BUSH · W.12

Principal:
Edwin H. Rice, F.R.I.B.A., Dip.Arch. (Leeds).

Session 1953-4

Day Classes (full-time) commence 14th September, 1953.
Evening Classes commence 28th September, 1953.
Enrolment Week—21st September, 1953.
Part-time Day Classes—Enrolment commences 14th September, 1953.

Day Courses—

Full-time Day National Diploma Courses are held for the training of students for administrative positions in the Building industry.

Also courses in Architecture, Structural Engineering and Building and Quantity Surveying for students preparing for the examination of these professional institutions.

Evening and Part-time Day Courses for—

Architects
Builders
Structural Engineers
Building and Quantity Surveyors
Auctioneers and Estate Agents
Reinforced Concrete Engineers
Foremen Bricklayers, Masons
Carpenters and Joiners
Plasterers
Plumbers
Woodcutting Machinists
Painters, Decorators and Signwriters

(480)

NEW COMPANIES

THE FOLLOWING NEW COMPANIES, registered in England, have been announced by Jordan and Sons, Ltd., company registration agents.

J. Sunderland & Co., Ltd. (522725.) Regd. August 15, joiners, carpenters, parquetry mnfrs., wood carvers and turners, etc. Nom. cap.: £1,000. Sub.: R. D. Kerr, Abbotsford, Wakefield-rd., Lightcliffe, nr Halifax.

South Side Builders, Ltd. (522733.) Regd. August 15, bldrs. and contractors, etc. Nom. cap.: £100. Dir.: B. Valentine, Thainstone, Kintore, Aberdeen.

J. H. Wolleter (Builders), Ltd. (522736.) Regd. August 15. Nom. cap.: £5,000. J. H. Wolleter, 20, Chester-rd. North, Streetly, signs as director.

Portwood Contractors (Leeds), Ltd. (522739.) Regd. August 15, Stransfield-chbrs., Gt. George-st., Leeds. Nom. cap.: £100, flooring contractors and specialists, etc. T. Schofield, 98, Burley Lodge-rd., Leeds, 6, signs as director.

McKenna Bros., Ltd. (522767.) Regd. August 17, 49, Queen-st., Blackpool, bldrs., bldg. contractors, etc. Nom. cap.: £1,000. Dir.: J. P. McKenna, 13, Kingdon-rd., West Hampstead.

W. A. Sear & Son, Ltd. (522829.) Regd. August 19, 49, Richmond-ave., N1, bldrs., decorators and sanitary engrs. Nom. cap.: £1,000. Dirs.: W. A. Sear and Mrs. A. Sear, 134, Normandy-ave., Barnet, Herts.

Robinson Murray & Co., Ltd. (522866.) Regd. August 20, bldrs. and contractors, etc. Nom. cap.: £10,000. Dir.: C. Robinson, Casa Alma, Syke-rd., Wigton, Cumberland.

George Cain & Co. (Plasterers), Ltd. (522869.) Regd. August 20, Rowbottom-chbrs., 25, Wallgate, Wigan. Nom. cap.: £5,000. Dir.: G. K. Cain, 2, Pearl-st., Wigan.

Seamark (Rustington), Ltd. (522894.) Regd. August 21, bldrs. and contractors, etc. Nom. cap.: £2,000. Subs: G. E. C. Chalmers and Mrs. E. R. Chalmers, Needwood, Sea-ave., Rustington, Sussex.

W. C. Pickering, Ltd. (522903.) Regd. August 21, bldrs., contractors, decorators, etc. Nom. cap.: £500. Dir.: W. C. Pickering, 27, Bartram-rd., Brockley, SE4.

W. J. Green (Contractors), Ltd. (522914.) Regd. August 21, 105a, Flaxman-rd., SE5, bldrs., contractors, etc. Nom. cap.: £3,000. Dir.: Rachel A. Thomas, 13, Fountain-st., Ferndale, Glam.

Gerald Andre, Ltd. (522952.) Regd. August 24. 322, High Holborn, WC1, interior decorators, etc. Nom. cap.: £1,000. Dirs.: E. G. Andrews and Mrs. M. F. Andrews, 2, Lincoln House, Astey's-row, Islington, N1.

James Dixon (Constructional Engineers), Ltd. (522955.) Regd. August 24. Nom. cap.: £1,000. Dir.: J. Dixon, The Orchard, Dibdale-rd., Dudley, Worcs.

Barker & Andrews, Ltd. (522984.) Regd. August 25, bldrs., bldg. and public works contractors, etc. Nom. cap.: £100. Dir.: C. R. N. Barker, 65, Dawlish-ave., Palmers Green, Middx.

Farrington Woodworkers, Ltd. (523013.) Regd. August 25, 46, Blandford-st., W1. Nom. cap.: £1,000. Dirs.: J. T. Farrington and Mrs. F. E. Farrington, 11, Cranmer-ct., Morden Park, Surrey.

Crisp & Hodgson, Ltd. (523022.) Regd. August 26, 185, Cricklewood Broadway, NW2, bldrs. and contractors, etc. Nom. cap.: £5,000. Dirs.: A. E. Crisp and R. J. Carter, 287, Nether-st., Finchley, N3.

Wigfield & Kirk (Contractors), Ltd. (523042.) Regd. August 26, joiners, bldrs, public works contractors, etc. Nom. cap.: £1,000. Dir.: R. Wigfield, The Cottage, Hood Green, Stainbrough, nr. Barnsley.

Balastic, Ltd. (523054.) Regd. August 26, 63 Ship-st., Brighton, flooring and tiling contractors. Nom. cap.: £2,000. Dir.: T. W. Baker, 2, Strongbow-rd., SE.

H. W. Small & Son, Ltd. (523064.) Regd. August 27, 44, Dean-rd., Bitterne, Southampton, bldrs. and contractors. Nom. cap.: £4,000. Dir.: R. W. Small, Westfield, Maddoxford, nr. Botley, Hants.

Wm. Thomson (Contractors), Ltd. (523122.) Regd. August 28, bldrs., bldg. contractors, etc. Nom. cap.: £5,000. Dirs.: W. Thomson and Doris M. Thomson, Snows-ride, Windlesham, Surrey.

Ambrit (Builders), Ltd. (523133.) Regd. August 28. Nom. cap.: £10,000. Sub.: Averil J. Mortimore, 21/2, Dunraven-st., W1.

PERSONAL COLUMN

The firm of Hills (West Bromwich), Ltd., Albion-rd., West Bromwich, has recently acquired the controlling interest in Bryan's Adamanta, Ltd., of Birmingham. Their managing director, MR. E. D. HINCHLIFFE, has become managing director also of the Birmingham company, whose board now consists of MR. F. J. BRYAN, chairman; MR. L. J. BRYAN, MR. R. BENNETT and MR. D. H. RHODES. Bryan's Adamanta, Ltd., have acquired additional premises and are installing modern plant for the production of precast plaster units, partitions, fireproof ceiling slabs, etc., while retaining their decorative fibrous plaster business.

After completing 54 years of service, MR. P. H. NYE, manager of the business development department of the General Electric Co., Ltd., is retiring on September 30.

DEVELOPMENT IN KENYA

Housing in the Urban Areas

THE constructive action which has been taken by the Kenya Government for the benefit of the African during the last seven years, and the positive measures which had some time ago been planned for the next few years, are described in some detail in a paper entitled "Some Aspects of Kenya Government Services for the Benefit of Africans from 1946 Onwards," which is issued by the Reference Division of the Central Office of Information. On the subject of living accommodation the paper states:—

The responsibility for the provision of African housing in the urban areas of Kenya lies with employers for their employees, including the Government and East Africa High Commission (including Railways and Posts and Telecommunication Services); local authorities for the general public; and private individuals.

The Government and the various services and departments of the High Commission provide a major part of the African housing in urban areas by the housing of their employees. Much of the housing is necessarily scattered in order that the employees may be housed near their place of work; for example, the quarters provided at the King George VI Hospital and at the Mathari Police Lines.

In addition, a considerable contribution to the housing problem is made by private employers. Detailed figures of the amount of accommodation provided are not available, but it has recently been estimated that approximately 1,400 dwellings for Africans have been provided in Nairobi by this means over the past three years.

The responsibility for the provision of African housing for the general public rests with local authorities, assisted both financially and by technical advice from the Central Government. Steps to deal with the urgent housing problems which even then existed, particularly in Nairobi and Mombasa, were taken during the war, when the Housing Fund of £600,000 was established. Half of the money for this fund came from a loan, to be converted later into a free grant, from the Colonial Development and Welfare Vote, and half from a loan from the Government. The funds so provided were allocated to Nairobi and Mombasa for approved housing schemes.

The majority of municipal housing schemes are not economic. The exception is the Nairobi Gorofani scheme, where the rents charged to employers are the full economic rents. Up to 1951, the Government and the City Council or Municipal Board met the deficit on approved housing schemes on a 50-50 basis. In that year it was decided, however, that it would be preferable if the Government grant were fixed, and a new formula has accordingly been adopted whereby the Government will pay a fixed unit grant (calculated by reference to the cost of building and maintaining accommodation for one person in the Municipality concerned) in respect of future approved sub-economic schemes. Ten thousand pounds was paid to the City Council of Nairobi in 1951 as the Government's share of subsidy on uneconomic schemes, and the estimated payments to all Municipalities under the new scheme in 1953 amount to £14,650.

The Nairobi City council has provided £2m. in its 1953-57 programme for the provision of African housing. Future schemes, including those still in the planning stage, include the following: Extension to Bahati to provide 920 bedspaces (£60,000); a housing estate on which plots will be let for building by private employers. The City Council has provided £120,000 for the provision of services (roads, sewers, etc.); and a scheme for precast concrete houses on the lines successfully adopted by the Highlands Produce Co., Ltd., at Kericho.

Mombasa.—An area of 136 acres has been acquired by the Government at Mombasa for use by the Municipal Board as a housing estate. It is intended that the Board will take over the land from the Government gradually as it is able to provide funds for layout and building schemes. The first instalment of the scheme, consisting of 40 houses to be built on a tenant-purchase basis, is already at an advanced stage of planning.

Nakuru.—The first stage of a programme designed to meet the Board's housing problem in full over the next five years will commence in 1953; 432 bedspaces to cost £27,450 will be provided in that year.

Eldoret.—The third stage of the housing programme, which has made steady progress since its inception in 1951, will provide 456 bedspaces in 1953.

Half Population in Council Houses

Aberystwyth Council is planning an additional 330 houses on one of its estates, and when completed it is expected half the population of the town's urban area will be living in corporation houses or flats.

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SELLING TO CANADA

British Trade Weeks

GOODS from the United Kingdom have been prominently displayed by merchants in the Prairie Provinces of Manitoba and Saskatchewan during British Trade Weeks which are being held this week in different centres.

This is the fifth year that the Provinces have sponsored similar Trade Weeks, with the object of doing everything possible to promote the sale of British goods. All kinds of British goods which are normally sold in the Provinces of Manitoba and Saskatchewan are being displayed. These goods range from pharmaceuticals, groceries, textiles, hand tools, etc., to diesel engines and automobiles.

In a message addressed to the Honourable D. L. Campbell, premier of Manitoba, and to the Honourable T. C. Douglas, premier of Saskatchewan, the Secretary for Overseas Trade, Board of Trade, Mr. H. R. Mackeson, said that he welcomed "the chance now given me of thanking you for your unfailing co-operation in the promotion of Anglo-Canadian trade in this and so many other ways throughout the past five years. I was heartened to see for myself in 1952 how many people in your Province understood the importance of developing trade between our two countries to the greatest possible extent. Both Canada and the United Kingdom are great trading nations. Each produces the goods most needed by the other. Although at present our low foreign exchange reserves make it necessary for us to restrict our imports from Canda, we look ahead to the time when we can earn enough dollars to buy freely all the foodstuffs, materials and manufactures which we should like to take from you. I am confident that this year's British Trade Weeks will help as its predecessors have done to bring this day nearer and I wish it every success."

The Trade Weeks follow other displays of British goods in Canada, which since the early summer, have been featured at the Prairie Fairs first at Brandon in Western Manitoba, and in successive weeks at Calgary, Edmonton, Saskatoon and Regina.

Housing Progress in Canada

The 1953 upswing in new residential construction continued in June, with the number of new dwelling units started and completed in Canada in the first six months of this year up substantially from the 1952 totals and also above the previous peak figures of 1951. The number of dwelling units started in the first half-year is almost 33 per cent. better than last year, at 46,746 against 35,291, a gain of 11,455 units, while completions were higher by 11,151 or more than 39 per cent., at 39,491 against 28,340.

The outlook for continued gains in new residential construction in the second half of 1953 was good at the end of June, with 62,791 new dwelling units under construction across the country, 8,506 units or nearly 17 per cent. more than the 50,285 under construction on the same date last year, and a larger number than the previous peak of 58,615 under construction on June 30, 1951. The number under construction at mid-year was higher than a year earlier in every province.

Starts and completions were higher in the six months in all provinces except New Brunswick, where completions were lower.

OVERSEAS BUILDING

[From Our Own Correspondents]

Australia.—Construction of Brisbane's first post-war skyscraper which will house the Mutual Life and Citizens' Assurance Co. will begin early next year. The building will be erected at the corner of Adelaide- and Edward-streets on a site acquired by that company earlier this year. It will be ten storeys high and of the maximum permissible height of 132 feet. It is understood that a special feature of its construction will be the extensive use of specially treated glass on the exterior of the building so as to provide as much natural lighting as possible.

Basutoland.—At the opening of the Natal Agricultural Union Congress at Pietermaritzburg on September 2, Sir John Le Rougetel, the United Kingdom High Commissioner for Basutoland, said it was hoped to dam the Orange and Senqunyane Rivers at Seforong where a basalt reef crossed the gorge 500 feet deep. If this were done, it would establish a reservoir 90 miles long that would take eight years to fill. The water could be used to harness 150,000 kilowatts of electric power on the main dam and at smaller dams further down the Orange River.

The High Commissioner said that both Basutoland and Swaziland were on the threshold of developments that would make them valuable to their neighbours. A new mountain road, started in Basutoland two years ago, had now reached the middle territory and consultations would soon begin with South Africa to decide where it would link up with the Union.

Great headway had also been made in soil conservation work in the Basutoland foothill country. In Swaziland harnessing of the natural resources and Government investment had led to a sudden advance. Three years ago Swaziland was unable to balance its budget without a Government grant. Next year it would enjoy a surplus of £380,000. Since the war £6m. had been invested in the territory and the output of the asbestos mines was now valued at £2½m. a year. The Colonial Development Corporation would soon plant 200,000 acres of pine forest and the commercial production of paper would begin about 1958.

* *Canada.*—Messrs. Frank Darling and Co., Ltd., 1636, West 4th-avenue, Vancouver, 9, BC, are seeking a UK source of supply of (a) electric and pneumatic tools, (b) unit heaters, etc., for hot water or steam, and (c) complete air filters. Those interested in this inquiry should communicate direct with the Vancouver firm. Inquiries by telephone should be made to the Export Services Branch of the Board of Trade, Tel.: Chancery 4411, Ext. 351.

France.—According to the Secretary of State for Information, a five-year plan for the development of television and further modernisation of the radio network of Metropolitan and Overseas France involving investment to a total of 17 milliard francs is to be launched next year. Ten milliards of this will be devoted to television, as France is far behind the United Kingdom in TV research and expansion. A "Society for the Development of Television in France" was constituted in France a few weeks ago with an initial capital of 275m. francs subscribed by the main banks, insurance companies and firms in the television industry. This foresees great expansion in this industry, including the construction of more factories and TV studios.

India.—Preliminary work on a £12m. project to bridge the Ganges 50 miles east of Patna will begin this month, it has been announced by the Indian railway board. This scheme is intended to end the bottleneck in communications across the Ganges in eastern India caused by having to rely on a ferry across the river. The cost of the bridge is expected to be about £5m., and the "guide and protection works required to stabilise the mighty Ganges at the site of the crossing will cost about another £2m." A new trans-shipment yard (on one side of the river the railway is a metre gauge and on the other it is broad gauge) and ancillary works will bring the total expenditure up to about £12m. The most difficult part of the project will be a guide bund (embankment) over one mile long and a 70 ft. high two miles long approach bank on the north side, both of which will have to be completed simultaneously from start to finish within about six months.

New Zealand.—Messrs. Merz and McLellan, engineering consultants, of London, have been appointed by the Minister of Works of New Zealand, the Hon. W. S. Goosman, to survey the area in the Wairakei territory and to prepare a preliminary report and cost of an estimate for a steam power station with an initial capacity of 20,000 kilowatts.

Salvador.—Much interest is being shown by private investors in the proposal to build a fish-canning plant in Salvador, South America. A mission is in the country under the Point IV clause of the Truman Plan investigating the prospects of establishing such an industry. The plant, when constructed, will also require refrigerating plants.

A milk-dehydrating plant is being built on a co-operative basis and should be completed by 1955.

Of great interest is a law recently passed in the country which sets out to encourage the hotel industry by granting customs franchise on the importation of necessary building materials and equipment. The law anticipates the possibility of the Government itself taking the initiative in establishing an hotel of the first category in the city of San Salvador. Plans are also being made for the erection of a hospital to cost some £80,000. There are also designs being prepared for the building of new Law Courts and to build the new Cathedral to take the place of the one which was destroyed by fire in 1951. Cost of the Cathedral is estimated at £½m.

The cement factory at Acajutla is now in production and is producing 100,000 bags of 42½ kgs. of cement monthly. As a result, the price of local cement has been reduced.

South Africa.—The South African Minister of Native Affairs, Dr. H. F. Verwoerd, has appointed a board of nine members to control the rehousing of Johannesburg's Western Areas natives. This is a step towards implementing the scheme to provide natives now living under crowded conditions with good accommodation in healthier surroundings. Mr. W. H. Heckroodt, former general manager of the South African Railways, has been appointed chairman of the board. Dr. Verwoerd said the Government would rehouse 57,000 natives now living on 209 morgen of land in a new area which was 862 morgen in extent. Here they would have better transport services, recreational facilities and many other amenities which did not exist where they now lived.

The scheme to provide natives living in the old location at Vereeniging with new houses in the model Sharp Township, west of the town, is now nearing completion. The first land for this scheme was bought by the Town Council in 1941 and more land in 1946, the total cost amounting to £25,732. Building operations began soon after the first land was bought, and now 3,165 houses have been built at a cost of £970,159. In addition, the Town Council has built clinics, shops, ablution blocks, a milk depot and a post office and provided sports facilities. It is interesting to learn that the houses have been sold to the natives at £250 for a house with a bathroom, and for £10 less without the bathroom. Terms are a deposit of £12 and the balance repayable at less than £3 a month.

In reply to a question in the House of Assembly in Cape Town recently, the Acting Minister of Health, Mr. B. J. Schoeman, said that the actual State expenditure on housing in the financial year which ended on March 31, 1953, was: Economic housing—Europeans, £7,360,118; coloured peoples, £95,043; and natives, £876,006. Subeconomic housing—Europeans, £280,447; coloured peoples, £440,899; and natives, £1,599,946.

Southern Rhodesia.—A scheme is being considered in Southern Rhodesia for the construction of a port on the Zambesi River somewhere near its confluence with the Mazoe River. This was announced recently by the Minister of Finance, Mr. E. C. F. Whitehead, who said this would be possible after the Kariba and Kafue hydro-electric works dams had been built. The Portuguese on the other side of the Zambesi already have a plan and this has been shown to the South Rhodesian authorities, who have displayed great interest. It has been decided consequently to enter into negotiation with adjoining territories to discuss ways and means of developing ports on the west and east coasts and also to link them up by rail.

* From the Board of Trade Special Register Information Service.

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The banking firm of Grindlays, Ltd., is to open new branches in Salisbury, Bulawayo and Lusaka. New premises are to be built. Over the course of the next three or four years it is expected that a number of branches will be opened in the territory.

The Rhodesian Wattle Company, a subsidiary of the Forestal Land, Timber and Railways Co., is doing a great deal of pioneering work in Central Africa building roads, new homes and factory accommodation. The company's Melsetter factory will be extended in 1954 and a new factory at Inyanga in Southern Rhodesia is to be started in 1955.

Tasmania.—The Premier of Tasmania, Mr. Cosgrove, hopes that an £A8m. industry to make rayon from wood pulp will be set up in Tasmania within the next few years. He told the Launceston Chamber of Commerce that the industry would probably be established at Recherche Bay, in the extreme south of the State. It would employ about 800 people, as well as forest gangs. Mr. Cosgrove said that experts from Italy and Britain would come to Tasmania at the end of November to inspect the area. Money for the proposed industry would be raised by the company concerned, and the Government would not have to contribute any capital.

Turkey.—Turkey has a large harbour development plan in operation to keep pace with the economic progress of the country. Contracts for the building of port facilities at Samsun involving expenditure of £8¼m. were awarded earlier on. The project includes a breakwater, three miles in length, as well as an 800-yard quay. The modernisation and expansion of the harbours at Istanbul and Izmir are also planned.

An American firm has also secured the contract for the construction of the Seyhan Dam which is being made possible by an International Bank loan of $25,200,000.

A modern textile mill is to be built at Adana and one has just been completed in the same town.

There has been much publicity in Turkey recently about the proposal to build a diesel tractor and motor factory at Izmir. A detailed plan has already been drawn up and submitted to the Izmir Chamber of Commerce. The work has been done by an Austrian.

CRICKET

RIBA Lose to CCC Team

THE MATCH between the RIBA Cricket Club and the Club Cricket Conference, played on September 2, resulted in an easy win for the Conference team. Results were as follows:—

RIBA

J. Kennedy Hawkes c Brown b Cuthbertson	4
J. G. Batty c Brown b Hill	15
B. S. Smyth c Brown b C. S. Davis	22
D. L. Robinson c Sherwood b C. S. Davis	34
D. Le M. Brock c Sammon b C. S. Davis	1
D. A. Woodley s Forsyth b C. S. Davis	13
C. A. R. Norton b C. S. Davis	13
A. Douglas c Hill b Sears	19
F. G. Cooper c Sears b C. S. Davis	4
J. Baverstock b Sears	2
R. G. Syms not out	1
Extras	1
Total	129

C. S. Davis 6 for 22. L. A. Sears 2 for 28.

CCC

P. V. Sherwood b Cooper	15
A. A. Brown not out	48
F. Micklethwaite not out	72
Extras	6
Total	141

L. A. Sears, K. Glendening, P. Bray, C. S. Davis, R. H. Hill, R. Sammon, A. Seaborne, C. C. Davis did not bat.

The SCOTTISH BUILDER

A Commemorative Chapel

THE Robin Chapel at the Thistle Foundation Settlement for disabled ex-Servicemen, Craigmillar, Edinburgh, has just been officially opened at a dedication service attended by the Queen Mother and Princess Margaret.

Built in memory of Robin Tudsbery, who was killed while serving as a subaltern in the Royal Horse Guards in the Second World War, it was designed by Mr. John F. Matthew, FRIBA, FRIAS. It is constructed of Doddington stone and roofed with Scottish slate. A special feature of the chapel is its cross window in the front of the building. The interior is embellished with wood carvings, mostly executed by Mr. Thomas Good, the Edinburgh artist. Few buildings erected in Edinburgh in the last decade have been so rich in the examples of the various kinds of craftsmanship.

The chapel is linked with the covered way of the settlement, which was designed by Mr. Stuart R. Matthew, ARIBA, ARIAS. The stained-glass windows were designed by Mrs. Walter Pritchard.

East Kilbride Appointments

THE SECRETARY OF STATE for Scotland has reappointed Mr. John Mann, CBE, to serve as a member of the East Kilbride Development Corporation for a further period of two years. He has also appointed Mrs. Mary B. Pinkerton to serve as a member of the Corporation for a period of four years in place of Miss Elizabeth B. Mitchell, who retires on completion of her term of office.

Two Edinburgh Exhibitions

AN EXHIBITION illustrating Dutch building techniques and styles of architecture is on show in Edinburgh's Royal Scottish Museum until September 12. Entitled "Building in the Netherlands," it deals not only with domestic architecture but also with industrial, educational and agricultural. It contains many models of Dutch buildings, and large-scale photographs illustrating aspects of the modern techniques which have been used in recent years.

Another Edinburgh exhibition of interest to builders and architects is that being held in the Saltire Society's historic building, Gladstone's Land, the Lawnmarket. Here the work of Charles Rennie Mackintosh, the architect and artist, is illustrated. It includes scale models of the Glasgow School of Art, for which Mackintosh was architect. Two other models represent unrealised projects, the Concert Hall for the Glasgow Exhibition of 1901 and the German competition project, Haus eines Kunstfreundes. The models for these were made from drawings by students of the Manchester University School of Architecture.

Speaking at the opening of the exhibition, SIR WILLIAM O. HUTCHISON, President of the Royal Scottish Academy, said he doubted whether any Scottish architect using the Scottish idiom, as it had developed, had produced anything better than the west end of the Glasgow School of Art. Like all great artists, Charles Rennie Mackintosh had surmounted the worst of his period and produced some very great work. It was an exhibition which should not be missed by any art lover in Scotland.

Scotland's Housing in July

TWO THOUSAND, three hundred and twenty six new permanent houses were completed in Scotland in July, bringing the total of completions this year up to 21,833. At the same date last year the number of completions was 16,032. In 1951 the number was 12,153.

The total of new permanent houses built in Scotland under the post-war programme now stands at 166,605. Including temporary houses and accommodation made available by conversion and adaptation of existing premises, altogether 205,193 new homes have been provided.

These figures are included in the monthly housing return issued by the Department of Health for Scotland and the Ministry of Housing and Local Government and published by HM Stationery Office, price 2d.

NEW BUILDINGS

Aberdeen.—TC has approved preliminary plans for a new £195,000 reservoir to serve the growing housing needs at Craigiebuckler. The reservoir will be erected at Pitfodels and will have a capacity of 2,750 gals.

Clyde.—Erection of an eastward extension of Shieldhall Riverside Quay on the River Clyde, for the Clyde Navigation Trust: *Holland & Hannen and Cubitts (Scotland), Ltd., £573,882.

Dumbartonshire.—Plans in hand for new shops and houses to be erected at Drumchapel. The architect is Archibald G. Jury (F), Housing Offices, The Trongate, Glasgow.

Dunfermline.—A start is hoped to be made early in 1954 on a new Roman Catholic church at the new township of Oakley, near Dunfermline, Fife. The seating capacity is to be 400. The work will be carried out in two stages, the first stage costing £15,000, for which an allocation has been made by the Diocese of St. Andrews and Edinburgh.

Glasgow.—Plans in hand for extensions and additions to be carried out for Harland & Wolff, Ltd., at Clydebrae-st., Govan. The architects and engineers are Hobart & Heron, Scottish Provident-bldgs., Belfast.

Glasgow.—Plans in hand for W. & J. Martin, Ltd., Brunswick-st., for alterations and additions at Baltic st. Corner, Pirn-st., for which the architects are Frank Burnet, Boston & Bell (F&A), 180, Hope-st., Glasgow.

Glasgow.—Plans in hand for additions and alterations at their factory at Alexandria-par., Dennistoun, for the Imperial Tobacco Co., Ltd., East-st., Bedminster, Bristol, 3.

Glasgow.—Plans prepared for bank at Crown-st., Gorbals, for The Commercial Bank of Scotland, Ltd., George-st., Edinburgh.

Glasgow.—Plans in hand for alterations and additions for The Royal Bank of Scotland, Ltd., to bank at Hope-st., for which the architects are F. J. Beveridge & Dallachy (A&A), 248, West George-st., Glasgow.

Glasgow.—Plans in the hands of their own architects for new buildings to be erected at Kelvindale-rd., Maryhill, by John Owens, 49, Rolland-st., Maryhill-rd., Glasgow.

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Glasgow.—Plans prepared for alterations and additions to the Kingston public school, Wallace-st., for which the architect is John MacNab (F), 129, Bath-st., Glasgow.

Glasgow.—Plans in hand for alterations and additions for Cooper & Co. (Stores), Ltd., to be carried out at Bishop-st., Anderston. The architect is James Bunyan (F), 32, Herbert-st., Hillhead, Glasgow.

Glasgow.—Plans in hand for alterations and additions for Southerns, Ltd., at Whitefield-rd. Govan. The architects are George Boswell, Mitchell & Johnstone (F&A), 256, West George-st., Glasgow.

Glasgow.—Plans prepared for new primary school to be erected at Sandwood-rd. for which the architects are Gavin Paterson & Son (F&A), 147, West Regent-st. Glasgow.

Glasgow.—Plans in hand for alterations and additions at Queen-st., for Hunter, Barr & Co. Ltd. (Warehousemen). The architects are Frank Burnet, Boston & Bell (F&A), 180, Hope-st., Glasgow.

Glasgow.—Plans in hand for extensions at Fordneuk-st., London-rd., for which plans have been prepared by the architectural staff of James Templeton & Co., Ltd., 62, Templeton-st., Glasgow.

Glasgow.—Plans prepared for alterations and additions for the Glasgow and West of Scotland Commercial College at Pitt-st., for which the architects are Frank Burnet, Boston & Bell (F&A), 180, Hope-st., Glasgow.

Glasgow.—Plans in hand for J. C. Watt (Meat), Ltd., for extensions to factory at the Avondale Works, Old Shettleston-rd., Shettleston, for which the architects are Gavin Paterson & Son (A), 147, West Regent-st., Glasgow.

Glasgow.—Plans in hand for G. N. Haden & Sons, Ltd., for alterations and additions at India-st., Charing Cross, for which the architects are Whyte & Nicol (F), 31, North Frederick-st., George-sq., Glasgow.

Glasgow.—Plans in hand for new canteen buildings to be erected for the Kidmar Hosiery Co., Ltd., at Swanston-st., Dalmarnock-rd., Bridgton.

Glasgow.—Plans in hand for alterations and additions for Fyfe & Fyfe, Ltd., at 203-205, Dumbarton-rd., Partick. The architects are Harold Hughes & Waugh (F), 206, Sauchiehall-st., Glasgow.

Grangemouth.—Scottish Oils, Ltd., are to carry out extensions to their workshops at Grangemouth at a cost of £45,000. Plans have been approved by the Dean of Guild Court. Approval has also been given by it to 76 three-apartment and 24 four-apartment houses by TC at a cost of £125,000.

Lanarkshire.—Plans in hand for The Scottish Industrial Estates, Ltd., for new factory block at Thornliebank, for which the architects are Watson, Salmond & Gray (F&A), Central Station-bldgs., Union-st., Glasgow.

Motherwell and Wishaw.—TC has approved plans for a £135,000 Civic Centre to be erected in the town.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

SEPTEMBER 16.

†Atherton UDC.—104 dwellings at Atherton. J. C. Prestwick and Sons, architects, Bradshawgate-chbrs., Leigh, Lancs. Dep. £2 2s.

***†Wimbledon BC.**—Ten flats and four houses on various sites. BE&S. Dep. £2 2s.

SEPTEMBER 17.

***†Wellington RDC.**—Four bungalows at School-rd., Donnington. W. B. Bond, FRICS, Windsor House, 49-50, Calthorpe-rd., Birmingham 15. Dep. £2 2s.

SEPTEMBER 18.

***†Bucks CC.**—Police station at Marlow. County A. Dep. £2 2s. Tenders by November 2.

***†Sutton and Cheam BC.**—21 houses at Gander Green-la. BE&S. Dep. £3 3s. Tenders by October 23.

SEPTEMBER 19.

***†Essex CC.**—Police station and houses, LCC estate, Aveley. County A, Chelmsford.

SEPTEMBER 21.

***Chislehurst and Sidcup UDC.**—Civil defence control centre. E&S. Dep. £2 2s.

***Portsmouth City C.**—96 houses at Billy Lawn, Leigh Park. City A. Dep. £3 3s.

***†Swansea BC.**—Sub-divisional police station with office accommodation and superintendent's house at Sway-rd., Morriston. Boro' A. Dep. £2 2s.

SEPTEMBER 24.

St. Thomas RDC.—Four houses at Bicton and three at Otterton. Lucas, Roberts and Brown, architects, Barnfield Hill, Exeter.

SEPTEMBER 25.

Bingham RDC.—Six houses and site works at Orston. W. Saunders & Ptnrs., architects, 24, Castle Gate, Newark-on-Trent. Dep, £3 3s.

SEPTEMBER 26.

***Horsham UDC.**—Public conveniences in Cherry Tree-la. S. Dep. £2 2s.

***Sunderland CBC.**—Supply and fixing of 14 shop fronts at Farringdon, Hylton Red House and Castletown estates. Boro' A. Dep. £2 2s.

SEPTEMBER 28.

***†Chigwell UDC.**—36 houses at Chigwell-row. Tooley & Foster, Midland Bank-chbrs., Buckhurst Hill.

Newcastle-upon-Tyne TC.—Erection of a home for aged persons at Kenton Hall, Newcastle-upon-Tyne. A. K. Tasker and Austin Child, chartered architects, 25, New Bridge-st., Newcastle-upon-Tyne.

SEPTEMBER 29.

New Quay (Cards) UDC.—Public conveniences and ancillary works at Church-rd. C, Church-st., New Quay. Dep. £2 2s.

SEPTEMBER 30.

***†Lincoln (Kesteven) CC.**—Three schools at Grantham, Branston and Ruskington sites. County A, Sleaford. Tenders by October 24.

OCTOBER 1.

York CC.—Four houses and site works at Naburn-la. City A. Dep. £1.

OCTOBER 2.

***Friern Barnet UDC.**—Garage at sewage disposal works, Cromwell-rd., N10. E&S.

***Glasgow Corp.**—Shops and flats at Toryglen. Architectural and Planning Dept., 20, Trongate.

Strood RDC.—20 houses at Sole-st., Cobham. E&S. Dep. £5 5s.

***Wanstead and Woodford BC.**—Two public conveniences at Grove Lodge and High-rd. TC. Dep. £3 3s. set of documents.

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OCTOBER 5.

***Dagenham BC.**—38 houses and 18 old persons' bungalows at Padnall-rd. and Sheepcotes-rd., Marks Gate estate. BE&S. Dep. £2 2s.

***Dronfield UDC.**—12 flats at Scarsdale-rd. Clerk, Council Offices. Dep. £2 2s.

***Mansfield TC.**—Public conveniences at junction of Stockwell-gate and Barcroft-la. BE&S, Carr Bank. Dep. £2 2s.

Rochford RDC.—14 houses at Bakers Grave, Barling Magna. E&S.

***Uxbridge UDC.**—Contract 262, 63 dwellings at Cowell-la. Hillingdon. E&S.

OCTOBER 7.

***Exeter CC.**—144 dwellings at Whipton Barton (North) housing estate. City A. Dep. £3 3s.

OCTOBER 8.

***Hampshire CC.**—Foundation, heating chamber and site works for Cove Hawley-rd. proposed infants' school. County A. Dep. £2 2s.

***Harrow UDC.**—(a) 44 dwellings and 8 garages at Stonegrove, Edgware; (b) 31 houses and 6 garages at Latimer-gdns., Pinner. E&S. Dep. £2 each case.

OCTOBER 10.

***Haslingden BC.**—21 houses and 16 flats at Longshort housing estate. BE&S. Dep. £2 2s.

OCTOBER 12.

Queensbury and Shelf UDC.—20 bungalows at Cockhill estate, Shelf. E&S, Council Offices, Queensbury. Dep. £2 2s.

***Sittingbourne and Milton UDC.**—32 houses at Canterbury-rd. estate. E&S, Council Offices, High-st. Dep. £3 3s.

***Wrexham BC.**—197 dwellings in groups of 75 and 122. BE&S. Dep. £3 3s.

OCTOBER 15.

***Beds CC.**—Farm buildings at Dunton. County Land Agent, Shire Hall.

OCTOBER 17.

***Welwyn RDC.**—New street works at Hawbush Common estate. Council's S. Dep. £3 3s.

NO DATE.

***West Sussex CC.**—Garage block at Drayton Highways depot nr. Chichester, Job. No. 3489.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

SEPTEMBER 16.

***†Swansea BC.**—Heating installation and hot water supply. Boro' A. Dep. £2.

OCTOBER 6.

***Liverpool City C.**—Redecoration of 20 cottages at Abertridwr, Llanwddyn, Montgomery. WE.

ROADS, SEWERAGE AND WATER WORKS

SEPTEMBER 25.

Altrincham BC.—Levelling and road and sewer construction on the trading estate, Atlantic-st. BS, Town Hall. Dep. £2 2s.

Staffordshire CC.—New road from St. John's-st. A.51, to Church-st., A.38. C, County-bldgs., Stafford. Dep. £5.

Wanstead and Woodford BC.—Road works, Wensley-ave. BE. Dep. £2 2s.

SEPTEMBER 28.

Bucks CC.—Newport Pagnell-Kettering Road, A509. Improvement between Northley farm and Warrington cross roads. County S, County Offices, Aylesbury Dep. £2.

Frome UDC.—Final preparation of Rossiter's-rd. housing site. B. Parkes, surveyor, 22, Christchurch-st, West. Dep. £2 2s.

SEPTEMBER 29.

Commissioners of Northern Lighthouses.—About two miles of road, with bridges, culverts, etc., from Melvaig to Rudh Re Lighthouse. D. Matheson and Sons, architects, Tulloch-st., Dingwall. Dep. £5 5s.

Flintshire CC.—Reconstruction of a section of High-st., Connah's Quay. County S., County-bldgs., Mold. Dep. £3 3s.

Tiverton RDC.—About 2,700 lin. yds. stoneware and 110 lin. yds. pumping main, with pumping station, disposal works, etc., at Halberton. Harvey, McGill and Hayes, engineers, 8, Richmond-rd., St. David's, Exeter. Dep. £3 3s.

SEPTEMBER 30.

Dorchester BC.—Roads and sewers on the Poundbury housing site. BS, Municipal Offices, North-sq., Dorchester. Dep. £3 3s.

OCTOBER 2.

Leicester CC.—1¼ miles of road reconstruction work on A426 and A4114. County S, Greyfriars, Leicester. Dep. £5.

Leicester CC.—Concrete bus laybyes and road improvement work at Hoton; hedge removal and fencing on Groby-Newtown Linford-rd. County E&S, Greyfriars, Leicester. Dep. £5.

OCTOBER 5.

Ashby-de-la-Zouche RDC.—About 3,000 yds. foul sewers, with pumping station and disposal works, etc., at Heather. Pick, Everard, Keay and Gimson, engineers, 6, Millstone-la., Leicester. Dep. £2 2s.

OCTOBER 7.

Huntingdon RDC.—Site works at Ellington. K. A. Milner, LRIBA, 4, Market Hill, Huntingdon. Dep. £2 2s.

Melford RDC.—Water mains extensions, Contract No. 8. Elliott and Brown, consultant engineers, Stanley House, Pelham-rd., Nottingham. Dep. £3 3s.

OCTOBER 17.

Hertford RDC.—Site development works at Tewin. C, Council Offices, Wallfields, Pegs-la., Hertford. Dep. £3.

OCTOBER 20.

Mold UDC.—Sewerage and sewage-disposal works extensions, Contract 2. W. H. Radford & Son, engineers, Albion-chbrs., King-st., Nottingham. Dep. £5.

NO DATE.

***Salford City C.**—Final site works at Ladywell Flats estate. City E. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Hammersmith.—FACTORY.—RT Products, Ltd., propose the erection of a factory at 261, Latimer-rd. The architects for the scheme, estimated to cost £7,500, are Mayell, Webb & Hart, 173, Holland Park-ave., W.11.

Hammersmith.—RESEARCH LABORATORY.—Building licence has been granted to a scheme for the erection of a research laboratory extension at Larden-rd., for CAV, Ltd., at estimated cost £124,500. The architects for the scheme are Clifford, Tee & Gale, 5, Buckingham Palace-gdns., SW1.

Ilford.—SCHOOLS.—CC has approved the inclusion of the following projects in the 1954-55 main building programme: Fairlop-rd. JM and I School; Grove Secondary Girls' School (second instalment); Beal Grammar-Technical (first instalment).

Ilford.—PUBLIC BATHS.—TC has approved the preparation of a scheme for the provision of new public baths at Fulwell Cross, Barkingside.

Ilford.—SCHOOLS.—Plans for the erection of the following are recommended to TC for approval: Assembly hall, kitchen and dining space at Gilbert Colvin School, estimated cost £15,000; hall and lavatory accommodation at The Glade School, estimated cost £10,000; additional classrooms, cloakrooms, storage and lavatory accommodation at Highlands School, estimated cost £5,984.

Wimbledon.—HOUSING.—BC has decided to acquire by compulsory purchase sites of 68-70, All Saints'-rd. for housing purposes.

Wimbledon.—PLAYING FIELDS.—BC has given permission for the development of land at rear of Atkinson Morley Hospital and The Firs, Copse-hill, as playing fields with sports pavilion and living quarters for groundsman.

Wimbledon.—HOUSES.—BC has given permission for division of site of 55, Parkside into six plots for the erection of houses. Scheme includes conversion of existing lodge and buildings at rear.

(PROVINCIAL)

Ashington.—Newcastle Reg. Hospital Brd., "Dunira," Osborne-rd., Newcastle-on-Tyne, plan additions to Ashington Hospital to increase number of beds from 55 to 150.—Also proposed to erect theatre suite, X-ray dept., chest clinic, nurses' home and boiler-house. Board's Chief A is P. H. Knighton.

Ashton-in-Makerfield.—UDC seek Min. approval for 218 houses at Bolton-rd. site and further 40 on Rectory-r1. site.

Bebington (Wirral).—BC to invite Willink & Dod, architects, of Liverpool, to design a new town hall. First stage of the scheme intended to house the treasurer's and surveyor's depts. The Ministry has sanctioned £56,000 for first stage of scheme.

Billingham-on-Tees.—UDC authorised to go ahead with third stage estimated to cost £8,400 of £33,000 John Whitehead Park scheme. Surveyor, J. H. Shepherd, Council Offices, Haverton Hill-on-Tees.

Birmingham.—EC approved new mod. sch. at Moseley, £192,566 est.; extensions to girls' gram. sch., Hartfield-cres., £59,224 est.; extensions at Moseley boys' gram. £37,076; extensions at Kings Norton boys' gram., £33,229 est.; extensions at Gower-st. boys' mod., £16,330 est.; new schools meals accommodation, etc., at Kings Heath (Camp Hill) boys' gram. sch., £19,518 est.—EC received approval for erection of following schs.:—Billesley girls' gram. sch. £198,033 est. first instalment of Teachers' Training College, £336,500 est.; Aldridge-rd. Multi-type first instalment, £273,229 est.; new nursery sch. at Brownmead, Shardend, £17,420 est.

Blackpool.—Blackpool Tower Co., Ltd., Empress-bldgs., Church-st., Blackpool, propose erection of theatre, cinema, music-hall, swimming pool, lock-up shops, etc., at Hornby-rd.

Bolton.—Manchester Reg. Hospital Brd. received approval for new occupational and physiotherapy unit at Gen. Hospital, £17,284 est.

Bootle.—EC seek approval for special sch. at Orrell Lodge, £35,000 est.

Brighouse.—TC approved in principle erection of factory at Wakefield-rd. Industrial Estate, for Luther, Astin, Ltd. Heckmondwike.

Burton Latimer.—UDC propose 24 houses on various sites in 1954 programme.

Bury.—Mitchell & Co., Ltd., Bolton-st., propose rebuilding of fire-damaged mill.

Bury.—Managers of Tech. College propose engineering lab. at Broad-st. premises.

Chapel-en-le-Frith.—RDC seek loan £31,369 for erection of 25 houses on Park-rd. site.

Cheltenham.—BC to ask MH and LG to approve following allocation for 1954: 376 houses and 164 flats at Arle and Hesters-way; 62 maisonettes and 100 flats at Princess Elizabeth-way; 20 maisonettes on Lynworth estate; 4 houses at Hesters Way-rd.

Cumberland.—CC to erect 21 nurses' houses to complete its building programme, est. cost over £50,000. Cty. A, J. H. Haughan, Portland-sq., Carlisle.

Cumberland.—CC to obtain tenders for converting "Garlieston" and "Sorbil," Whitehaven, into home for old people, cost, including furnishings, £13,200.—CC considering £50,000 scheme by Cty. A, J. H. Haughan, Portland-sq., Carlisle, for health centre at Whitehaven.

Darlington.—Raine Bros., Bowman-st., Harrowgate Hill, Darlington, propose 12 houses in Clarendon-rd.

Darlington.—Boro' A to report on provision of additional accommodation at Darlington gram. sch.—TC received loan sanction at £31,345 for 22 houses at Firth Moor; and £154,500 for 108 houses at Firth Moor.—Boro' A to prepare plans and estimates for converting premises into old people's home.—TC approved plans for four houses in Hewitson-rd. South, for Territorial Army.

Derbyshire.—CC received approval for erection of day special sch. for sub-normal children in 1954/5 programme, £28,000 est.

Gateshead.—Contracts to be let shortly by TC for erection of health centre clinic at Carr Hill-rd., cost about £12,000. Plans by BE, G. F. Winters.

Halifax.—BC received approval for completion of bus stn. at Cross Field, £30,000 est.

Hucknall.—UDC propose erection of 60 flats and further 100 houses during present programme.

Hyde.—Cheshire CC received approval for erection of prim. sch. at Newton in 1954/5 programme.

Lancaster.—British Railways considering construction of halt stn. at Scale Hall.

Leeds.—TC preparing plans for erection of five aged persons' hostels at various sites.

Leeds.—TP Com. approved, on September 1, erection of six shops with living accommodation on Southleigh estate, Dewsbury-rd., four houses and shops in Green-la. and Woodland Hill, Halton, and six houses with shops and garages in The Avenue and The Drive, Alwoodley. Also approved were four shops, four maisonettes and eight garages in The Crescent, Adel.

Leeds.—Transport Com. announce scheme for new bus depot (100 buses) on Ring-rd. between Wetherby-rd. and Wellington Hill, also conversion of Headingley tram depot into bus garage.

Liverpool.—TC approved detailed layouts for 12 flats at Anfield-rd. and 99 houses and 16 flats at Back Gillmoss-la., Croxteth estate. City A, Dr. Ronald Bradbury.

Macclesfield.—TC propose extensions to Western estate and erection of shops, health centre and similar buildings.

Manchester.—TC approved plans:—36 flats in three-storey blocks (scheme 182C, Peel Hall neighbourhood, Wythenshawe); 12 A2 flats and nine aged persons' dwellings (schemes Nos. 164C and D, Hillside estate, Blackley); six flats at Ashurst-rd. (Peel Hall neighbourhood, Wythenshawe); two police houses, Clarendon-rd., Whalley Range.—EC propose educationally sub-normal special sch., off Moor-rd., Northern Moor.

Manchester.—RC authorities received approval for sec. sch. at Peel Hall, £140,000 est. Commence March, 1954.

Maryport.—Outpatients' dept. proposed at Maryport Cottage Hospital, for Newcastle-on-Tyne Reg. Hospital Brd. Board's architect for Cumberland area, N. Edgar, 1, Lonsdale-st., Carlisle.

Mersey.—A start is to be made with construction of single carriage-way suspension bridge across River Mersey, linking Runcorn and Widnes, cost about £1,300,000.—Tenders to be invited for piers and anchors of two-cable bridge.

Newcastle.—Marconi International Marine Communications Co., Ltd., to build offices and repair depot at Melbourne-st. Architects, Taylor, Son & Bracken, 20, London-rd., St. Albans. Plans by C. S. Errington, 46, Grainger-st., Newcastle-on-Tyne, for additions to Cremona Confectionery Factory, Benton, Newcastle, have been approved.—Reg. Hospital Brd. have plans in view for further extension of hospital at Ashington, to include new wards, operating theatres, chest clinic, nurses' home and boiler-house, est. cost £200,000. Plans by Board's A, P. K. Knighton, "Dunira," Osborne-rd.—City C has renewed application to MH & LG to proceed with first stage of town hall plan, total cost est. £2m. It is proposed as first stage to build offices costing £460,000. City A, G. Kenyon, 18, Cloth-market, Newcastle.—Town Improvement and Streets Com. approved plans by Northumberland CC for converting "Priorsdale," Clayton-rd., into old people's home. Plans by C. C. Brown, Cty. A, County Hall, Newcastle.—Revised plans by H. Gatoff, Trafalgar-st., Newcastle, for garage in Ouse-st., for R. Rankin & Co. approved.—City Corp. decided to utilise an industrial site in Hill-st. for flats. City A, G. Kenyon, 18, Cloth-market, Newcastle.

Newcastle-on-Tyne.—City C recommended to spend £21,690 on improvements to heating arrangements in 798 aluminium bungalows, also to use land in Hill-st. for erection of 66 flats.—District surveyors' depot costing £12,000 proposed at Iris brickfield.

Northampton.—Byfield Leather Co., Ltd., propose erection of factory to replace one destroyed by fire.

North Riding.—CC asked by EC to borrow £45,730 for erection of South Bank cty. prim. sch; £56,000 for Thornaby cty. prim. sch.—It is proposed to spend £11,270 on construction of an ambulance stn. at Hill House estate, Richmond. Cty A, H. J. Knowles, County Hall, Northallerton, Yorkshire.

Northumberland.—Plans and estimates approved by EC for proposed Prudhoe sec. mod. sch. Cty. A, C. C. Brown, County Hall, Newcastle-on-Tyne.

Nottingham.—TC approved drill hall at Wigman-rd., for Notts Territorial and Aux. Forces Assoc.

Oldbury.—F. W. Woolworth & Co., Ltd., propose alterations to Peacocks Stores Ltd., Birmingham-st., to form store premises.

Oldbury.—Oldbury Repertory Players received licence for conversion of Spring-st. Methodist Church, Langley, as Little Theatre. Architect, T. Dunkley Hogg. £5,000 est.

Oldham.—BC to commence erection of houses at Alt-la. early in 1954.

Penistone.—Yorks Elec. Brd. propose showrooms and offices on south side of Park-ave.

Ripponden.—UDC propose 19 houses at Rishworth Hall Farm.

Salford.—Germ Lubricants, Ltd., propose rebuilding after fire damage, £65,000 est.

Scarborough.—TC BE to prepare plans and estimates for rebuilding of bungalows at North Bay.

Sheffield.—John Shaw & Sons, Ltd., Wolverhampton, propose erection of factory on site to be selected.

Sheffield.—TC approved erection of 2,000 flats in Norfolk Park area.—Appointed Oxley, Bussey, Sheffield, as architects for erection of 69 houses on 10 infilling sites at various estates.—Propose erection of motor omnibus garage at Handsworth-rd.

Southampton.—Plans approved by Southampton BC for 12 maisonettes to be erected in Swift-rd., Woolston, Southampton, by Thos. Exley, bldr., 47, Bridge-rd., Woolston.

Southport.—TC propose erection of 38 houses adjoining Stray, Churchtown; to consider erection of 65 flats at corner of Albert-rd. and Leicester-st.

Stalybridge.—BC to provide site for 850 houses at Carrbrook, for Cheshire CC.—Approved hoist tower and lavatory accommodation at Worthington-st., for Lancashire Cotton Corp., Ltd.—Cheshire CC propose erection of branch library at Millbrook site. Architects, Howard & Benson, 88, Mosley-st., Manchester.

Stoke-on-Trent.—TC approved plans:—22 houses off

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Broomfield-dr.; 58 houses at Dauville- and Warrington-rds., Bucknall; 26 houses at Amison-st., Longton; and 16 houses off Dickens-rd., Townsend.

Sunderland.—Assemblies of God Pentecostal Church has applied to TC for site at Pennywell, for proposed church.

Sunderland.—TC recommended by Libraries Com. to spend £15,000 on converting Grindon House into branch library and museum.

Sunderland.—TC approved plans for construction of bus repair depot in Olive-st., for Northern General Transport Co., Ltd., Bensham, Gateshead.

Tamworth.—TC propose 100 dwellings at Gillway estate and 100 at Browns-la. estate.

Turton.—UDC seek loan £71,314 for 41 houses and 12 flats at Toppings estate.

Wakefield.—TC approved plans for branch library at Lupset.

Walshaw.—Managers of C of E sch. propose dining-room.

Worksop.—Notts CC propose additions and improvements at Court House, £13,000 est.

Yorks.—Bulmer & Lumb, Ltd., propose erection of factory at Buttershaw. Architects, Walker & Collinson, 12, The Exchange, Bradford.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Brighouse.—10 houses at Rastrick Field-la. site, for BC: *Rowland Lumb & Co., £13,036; 10 aged persons' bungalows: *H. Castle & Son, Ltd. (Subject to further negotiation with Surveyor.)

Burnley.—St. John's RC primary school at Ivy-st., for BC. BE&S: *M. and J. W. Heap, Ltd., Clifton-st., Burnley, £5,733.

Cheltenham.—Erection of 24 managerial houses at Oldfield Court: *Wheeler and Mansell, Ltd., £68,548.

Dodworth.—72 houses for UDC: *John Stothard & Sons, Albert-st., Cudworth, £91,937.

Eastbourne.—Hostel and dining/teaching blocks for Chelsea College of Physical Education at rear of "Bishopsbourne," Carlisle-rd., for BC. R. Williams, BSc, AMICE, BE&S: *Ringmer Building Works, Ltd., Ringmer, Sussex, £67,725.

Eastbourne.—Eight flats at corner of Cavendish-pl./Tideswell-rd., for BC. R. Williams, BSc, AMICE, BE&S: *J. G. Robinson & Sons, Ltd., Eastbourne, £15,447.

Golborne.—32 houses and 10 bungalows at Culceth, for UDC; *G. & J. Seddon, Ltd., Little Hulton, nr. Bolton, £46,285.

Jarrow-on-Tyne.—Erection of hostel for Durham CC. Cty. A, G. R. Clayton, Court-la., Durham. Quantity Surveyors: Turner & Ing, 71, Linthorpe-rd., Middlesbrough: *M. S. Failes, Ltd., Coatsworth-rd., Gateshead, £33,781.

Kidderminster.—Erection of 251 non-traditional houses for TC: *Geo. Wimpey, Ltd., Castle Bromwich, Birmingham, £323,435.

Lichfield.—Six shops with eight flats and maisonettes over, for CC. Architects, Gray & Ballinger (A&A), 24, Bird-st., Lichfield. Quantities by T. Pemberton, Corporate QS, 19, Waterloo-rd., Wolverhampton:—

E. G. Lester, Ltd., Stafford	£23,518
F. A. & H. Taylor, Bloxwich, Staffs	22,868
*Geo. Seedhouse, Tudor House, London-rd., Lichfield	20,199

(Subject to MoH & LG approval.)

Liverpool.—Works for Reg. Hospital Brd.—Extensions of thoracic surgery at Broadgreen hospital: *Brook Construction (Liverpool), Ltd., 3, Blake-st., Liverpool, £15,212; alterations to wards 1 and 3 at Warrington isolation hospital: *R. W. Collin, 12, Marson-st., Warrington, £5,380.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended September 5:—

Building work: R. M. Phillips & Son, Ltd., Estate Yard, Brigg, Lincs; Ellis, Thompson & Co., Ltd., 1-3, James-st., Louth, Lincs; Potter Bros., East Dereham, Norfolk. *Resurfacing work*: Thomas Ashley (Contractors), Ltd., 314, Chester-rd., Hartford, nr. Northwich. *Electrical wiring services*: Harry Bibby & Co., Ltd., Buttermarket-st., Warrington.

London (British Railways).—New contracts placed by London Midland Region:—

Renewal of the engine shed roof with asbestos cement coverings, and repairs to pits and pavings at Lostock Hall motive power depot: *Weston & Co. (Manchester), Ltd., 97, Bridge-st., Manchester 3. Drainage works between 54 miles and 54¼ miles at Castlethorpe: *Leonard Fairclough, Ltd., Terminal House, Grosvenor-gdns., London, SW1. Earthworks in the locomotive examination and repair shop at Crewe North motive power depot: *Leonard Fairclough, Ltd., Chapel-st., Adlington, Lancs. Repairs and repointing of brickwork of Awsworth-Giftbrook Viaduct: *J. E. B. Wheatley, 3, Diamond-ave., East Kirkby, Notts.

London (Metropolitan Police).—Contracts placed by the Metropolitant Police:—

External redecorations at Camberwell PS: *T. Graham & Co., £530. Ext. and int. redecorations and repair at Tottenham PS: *A. E. Field, Ltd., £2,439. Improvement to ground-floor lavatory at Marylebone Magistrates' Court: *Charles Baines (Contractors), Ltd., £1,780. Ext. painting and repairs and int. decorations at West Ham PS: *J. & A. Porter & Co., Ltd., £2,200. Int. redecoration at 95/109, Ronver-rd., Lee: *A. E. Tidey, Ltd., £470. Erection of 11 flats at 85/95, Prince Regent-la., West Ham: *C. J. Manning (Builders), Ltd., £21,387.

¶London (MoW).—Contracts placed by MoW during week ended August 29:—

London: 1-8, Richmond-ter., SW1, internal and external repairs, Galbraith Bros., Ltd., 61, Bartholomew-cl., EC1. *Berkshire*: High-st., Abingdon, extensions to telephone exchange and HPO, W. E. Chivers & Sons, Ltd., Devizes, Wilts. *Cheshire*: M/Supply Depot, Lily-la., Byley, Cheshire, repairs and treatment to "Robin" and "Bellman" hangars, Berry Wiggins & Co., Ltd., Field House, Breams-bldgs., Fetter-la., London, EC4. *Derbyshire*: Swadlincote, extensions to telephone exchange, J. H. Fryer, Ltd., Great Northern-rd., Derby. *Flintshire*: MP No. 4 Polish Hospital, Iscoed Park, external painting, W. J. Brooker, Ltd., Eastwood-ave., Ellesmere Port, Cheshire. *Glamorganshire*: JOB Govt. Buildings, TyGlas-rd., Llanishen, Cardiff, internal redecorations. Ian Williams & Co., 59, Queen-st., Cardiff. *Hertfordshire*: Garston Building Research Station, Watford, erection of exposure test beds, Haymills, Ltd., Hanger Green, Western-ave., W5.

Kent: Greenhithe, erection of TE UAX, Herbert Richardson & Son, Ltd., Ronald Works, Slades Green, Erith. *Lancashire*: M/Health, Moss Side Institution, Maghull, rebuilding and rectification to boundary walls, Tysons (Contractors), Ltd., Dryden-st., Liverpool 5. *Lancashire*: Longford Post Office and TE, King-st., Stretford, erection of vertical extension, E. B. Jones & Rawlinson, Ltd., 6, Leaf-sq., Salford 6. *Middlesex*: NPL, Teddington, external and internal redecorations, South London Decorators, Ltd., 9, Streatham High-rd., SW16. *Rutland*: Woolfax Lodge Airfield, repairs to No. 2 hangars, W. Brick & Sons (Stamford), Ltd., 32, Broad-st., Stamford, Lincs. *Staffordshire*: Liverpool-rd., Kidsgrove, erection of PO ATE, Geo. A. Poole, Ltd., 37, Liverpool-rd., Newcastle, Staffs. *Warwickshire*: Home Office, Arbury-rd., Nuneaton, conversion of ex-food stores, Wilson Lovatt & Sons, Ltd., Clarence-st., Wolverhampton.

London (War Dept.).—Works contracts placed by WD during week ended August 29:—

Yorkshire: Painting and decorating, Alfred Bagnall & Sons, Ltd., Shipley. *Nottinghamshire*: Roof repairs, Mellowes & Co., Ltd., Sheffield. *Yorkshire*: Painting and decorating, N. S. Long, Ltd., Poulton-le-Fylde. *Cumberland*: Painting and decorating, Gregory & Jackson, Ltd., Manchester. *Northamptonshire*: Painting and decorating, Spraycraft Co., Ltd., Bromley. *Yorkshire*: Building, F. Shepherd & Son, Ltd., York. *Berkshire*: Painting, Bitumen Industries, Ltd., Slough; Building, A. T. Chown & Co., Ltd., London, W2.

Essex: Painting and decorating, S. Lupton & Sons, London, SW1. *Norfolk*: Painting and decorating, Oliver Staines & Son, Swaffham. *Kent*: Building, Cox Bros., Maidstone. *Essex*: Electrically operated shutters, Birmingham & Blackburn Constr. Co., Ltd., Birmingham. *Cheshire*: Painting and decorating, J. Lightfoot & Son, Chester. *Shropshire*: Bituminous treatment to sheds, Structural Waterproofers, Ltd., London, SW6. *Ayrshire*: Painting, William McKerracher, Glasgow.

Maidenhead.—Sixteen houses at Larchfield estate, contract 3W, for BC. C. T. Read, BE&S: *E. A. Calder, Ltd., Langley, nr. Slough, £21,785.

Maidenhead.—24 houses on Spencers estate, contract 4C, for BC. C. T. Read, BE&S: *Waymins, Ltd., Virginia Water, £32,298.

Manchester.—24 flats and four houses at Woodhouse Park (Contract 192): *Direct Labour; seven shops and garages, four flats and five maisonettes at Chapel-la., Blackley, and 30 houses and cottage flats at Woodhouse Parks (Contract 193): *G. & J. Seddon, Ltd., Little Hulton, nr. Bolton.

Milnrow.—46 houses at Bentgate estate, Newhey, for UDC: *J. Gerrard & Sons, Ltd., Swinton £58,678.

Newcastle-on-Tyne.—Alterations and sanitary accommodation, together with lift, at the Bank of England, Grey-st., Newcastle-on-Tyne: *Stephen Easten, Ltd., Westgate Grange, Westgate-rd., Newcastle.

Newcastle-on-Tyne.—A factory to be built at Two Ball Lonnen, for Messrs. Gregory & Spence: *Constables (Newcastle), Ltd., Great House, Newcastle.

Nottingham.—Adaptations at West Manor, Ruddington, for CC: *Mapperley Building Co., Ltd., 668, Woodbro-rd., Nottingham, £6,640.

Outer Hebrides.—A new hydro-electric generation stn., for Inverness-shire, for the Northern Electricity Brd., Rothesay-ter., Edinburgh, is to be erected on the Island of South Uist at Daliburgh. Merz & McLellan, engineers, Milburn-la., Esher, Surrey: *The Trinidad Lake & Asphalting Co., Ltd., Oatlands, Glasgow.

Plymouth.—Erection of 48 Cornish Unit dwellings (28 houses, 20 flats) on the Crownhill estate, for City C: *Sellick Nichols & Co., £62,821.

Rawtenstall.—Extensions to Rawtenstall & Bacup Auction Mart: *A. & H. Hargreaves, New Church-rd., Rawtenstall.

Runcorn.—47 houses at Appleton, for Min. of S. B. Preston, BSc, AMICE, E&S: *J. H. Kirkby, Rylatt, 8, Harewood-ave., Ashton-on-Mersey, Sale, Cheshire, £80,528.

Scottish Special Housing Association, Ltd.—Contracts placed between June 25 and August 9:—

Site Servicing.

Mountfleurie, Leven (50 Trad.), P. Laing & Son, Dunfermline, Clearing, levelling and planting open space. Muiredge, Buckhaven (50 Cruden), Alliance Construction (Scotland), Ltd., Dundee, Drain connection. Dalneigh, Inverness (54 "Dunedin"), John Wight & Co. (Edinburgh), Ltd., Edinburgh, Construction of foot pavements.

House Erection.

Whitecraig, Midlothian (4 Trad.), SE Scotland Electricity Brd., Edinburgh, Electric services. Laighstonehall, Hamilton (2 Miller), James Miller & Partners, Edinburgh, All trades. Mains of Fintry, Dundee (150 timber), Weir Housing Corp., Coatbridge, All trades. Bank-st., Irvine (100 Miller), James Miller & Partners, Edinburgh, All trades. Forehill-rd., Ayr (50 Miller), James Miller & Partners, Edinburgh, All trades.

Beith-rd., Johnstone (66 houses), SW Scotland Electricity Brd., Glasgow, Electric services. Braehead, Linlithgow (74 Miller), SE Scotland Electricity Brd., Stirling, Electric services. Cadder-rd., Glasgow, Wm. Prentice & Sons, Caledonian Works, Larkhall, Unclimbable steel fence. North-West Larkfield, Greenock (222 houses), SW Scotland Electricity Brd., Glasgow, Electric services. Paris-ave., Denny (20 Timber and 76 Miller), Barnet & Morton, Kirkcaldy, fencing.

The Policies, Galashiels (30 "Dunedin"), Cruden Houses, Ltd., Musselburgh, All trades. The Square, Dunkeld (4 Trad.), James Scott & Co. (Electrical Engineers), Ltd., Perth, Electrical; E. Haxton, Dunkeld, Plumber; A. Campbell & Son, Dunkeld, Plaster. Falside, Bathgate (13 "Dunedin"), G. Crighton, Bathgate, Handrails. Vogrie-rd., Gorebridge (122 "Dunedin"), SE Scotland Electricity Brd., Musselburgh, Electric services. The Square, Dunkeld (4 Trad.), W. G. Walker & Sons, Edinburgh, Floor finish. Borestone, Stirling (40 Trad.), Scottish Gas Brd., Stirling, gas services.

Pinkie Braes, Musselburgh (84 flats), Northern Sports Ground Const. Co., Ltd., Edinburgh, Fencing. Bank-st., Irvine (Various), Hay & Anderson, Kilwinning, Fencing. Hayshead, Arbroath (218 Trad.), Town Council, Arbroath, Privet hedges fencing. Drumbrochan, Cumnock (40 Cruden), SW Scotland Electricity Brd., Kilmarnock, Electric services. West End, Armadale (4 Trad.), W. Forsyth (Building Contractors), Ltd., Bathgate, Supply and fitting four pass doors.

Fleurs-pl., Forres (100 Various), Maclennon Bros., Forres, Boundary fencing. West End, Loanhead (80 Trad.), Northern Sports Ground Const. Co., Ltd., Edinburgh, Fencing. Mastrick, Aberdeen (100 "No Fines"), James Miller & Partners, Ltd., Edinburgh, All trades. Faifley, Clydebank (100 Atholl), Atholl Houses, Ltd., Glasgow, All trades. Faifley, Clyde-

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bank (102 Atholl), Atholl Houses, Ltd., Glasgow, All trades. Fairyburn, Alloa (100 " Dunedin "), John Wight & Co. (Edinburgh), Ltd., Edinburgh, All trades.

Whiteside, Bathgate (72 " Dunedin "), John Wight & Co. (Edinburgh), Ltd., Edinburgh, All trades. Falside, Bathgate (110 " Dunedin "), John Wight & Co. (Edinburgh), Ltd., Edinburgh, All trades. Springhill, Springside (30 Stuart), SW Scotland Electricity Brd., Kilmarnock, Electric services; Scottish Gas Brd., Greenock, Gas (mains to meter). Bank-st., Irvine (100 Miller), SW Scotland Electricity Brd., Kilmarnock, Electric services. Midton, Gourock (120 Miller), A. M. Tweedie & Co., Glasgow, Chain link fencing.

Penicuik (140 " Dunedin "), Jas. Strang & Son, Falkirk, Boundary fencing. Haldane, Dumbartonshire (262 " No-Fines "), Jas. Miller & Partners, Ltd., Edinburgh, All trades. Bellsmyre, Dumbarton (12 " O'Sullivan "), Jas. Miller & Partners, Ltd., Edinburgh, All trades. Faifley, Clydebank (82 Blackburn), Blackburn (Dumbarton), Ltd., Dumbarton, All trades. Bank-st., Irvine (100 Miller), Scottish Gas Brd., Irvine, Gas (mains to meter). Bypass-rd., Beith (44 Stuart), SW Scotland Electricity Brd., Kilmarnock, Electric services. Borestone, Stirling (40 Trad.), SE Scotland Electricity Brd., Stirling, Electric services.

Paris-ave., Denny (76 Miller), Wm. Prentice & Sons, Larkhall, Handrails. Ratho (16 " No-Fines "), A. Marshall & Son, Kirknewton, Boundary fencing; Scottish Gas Brd., Edinburgh, Gas services. Burnfoot, Hawick (80 " Dunedin "), John Wight & Co., Ltd., Edinburgh, All trades. Cadder-rd., Glasgow (16 Trad.), Toryglen, Glasgow (72 " No-Fines "), and Newbattle, Midlothian (275 houses), Scottish Gas Brd., Glasgow, Gas services. Newbattle, Midlothian (177 houses), Northern Sports Ground Const. Co., Edinburgh, Fencing. Tullibody (40 Various), John Gow & Sons, Sauchie, Alloa, Fencing. West End, Fraserburgh (36 Granite Finish), Durastic, Ltd., Glasgow, Floor finishing. Loanhead (6 Trad.), D. Kyles & Son, Ltd., Edinburgh, Plumber; Jas. Scott & Co. (Electrical Engineers), Ltd., Edinburgh, Electrical.

Work undertaken by SSHA Direct Labour Organisation:—

Site Servicing.

Newbattle, Midlothian (308 No-Fines), Road and footpath surfacing. North-West Larkfield, Greenock (420 houses approx.), Road and footpath surfacing. Park Farm, Port Glasgow (60 houses), Road and footpath surfacing. Carrochan-cres., Balloch (4 Trad.), Road and footpath surfacing. Beancross, Grangemouth (100 houses), Road and footpath surfacing. Knock Farm, Renfrew (26 Lawrence), Road and footpath surfacing. Pathhead, Midlothian (44 No-Fines), Road and footpath surfacing. Hyvots Bank, Edinburgh (70 Dunedin), Road surfacing. Pumpherston, Midlothian (32 No-Fines), Road surfacing. Midcalder, Midlothian (20 No-Fines), Road surfacing.

House Erection.

Newbattle, Midlothian (253 No-Fines), All trades less electrical work.

Maintenance.

Livingstone-st., Clydebank (100 Whitson/Fairhurst), J. Grant (Decorators), Ltd., Glasgow, Paint; J. Graham, Dumbarton, Paint. Larkfield, Greenock (150 No-Fines), W. & P. Mackie, 1, Kilblain-st., Greenock, Paint.

Shardlow.—74 houses and eight flats, for RDC: *Kirkland (Derby), Ltd., Oakes Yard, St. Peter's-st., Derby, £107,960.

South Bank-on-Tees.—Construction of bakery, for Welford's Cleveland Bakery, Ltd., Redcar. Architect, J. G. L. Poulson, LRIBA, Ropergate, Pontefract: *Norman Thompson, Ltd., Stonehouse-st., Middlesbrough.

Stalybridge.—Single-storey flats at Denesne-st., Copley estate, for BC: *N. Murray, Booth-st., Stalybridge.

Stanley.—Erection of 72 houses at Burnopfield, for UDC. Surveyor, J. R. Heslop, Council Offices, Stanley, Durham: *Direct Labour.

Sunderland.—Erection of 14 houses in Nilverton-ave. Architects, J. Potts & Son, John-st., Sunderland: *Stewarts Builders (Sunderland), Ltd., Richard-ave., Sunderland.

Wores.—Erection of Pershore Institute of Horticulture, for CC: *Wheeler & Mansell, Ltd., Lime-st., Evesham, £100,000 approx.

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